SERIAL NUMBER

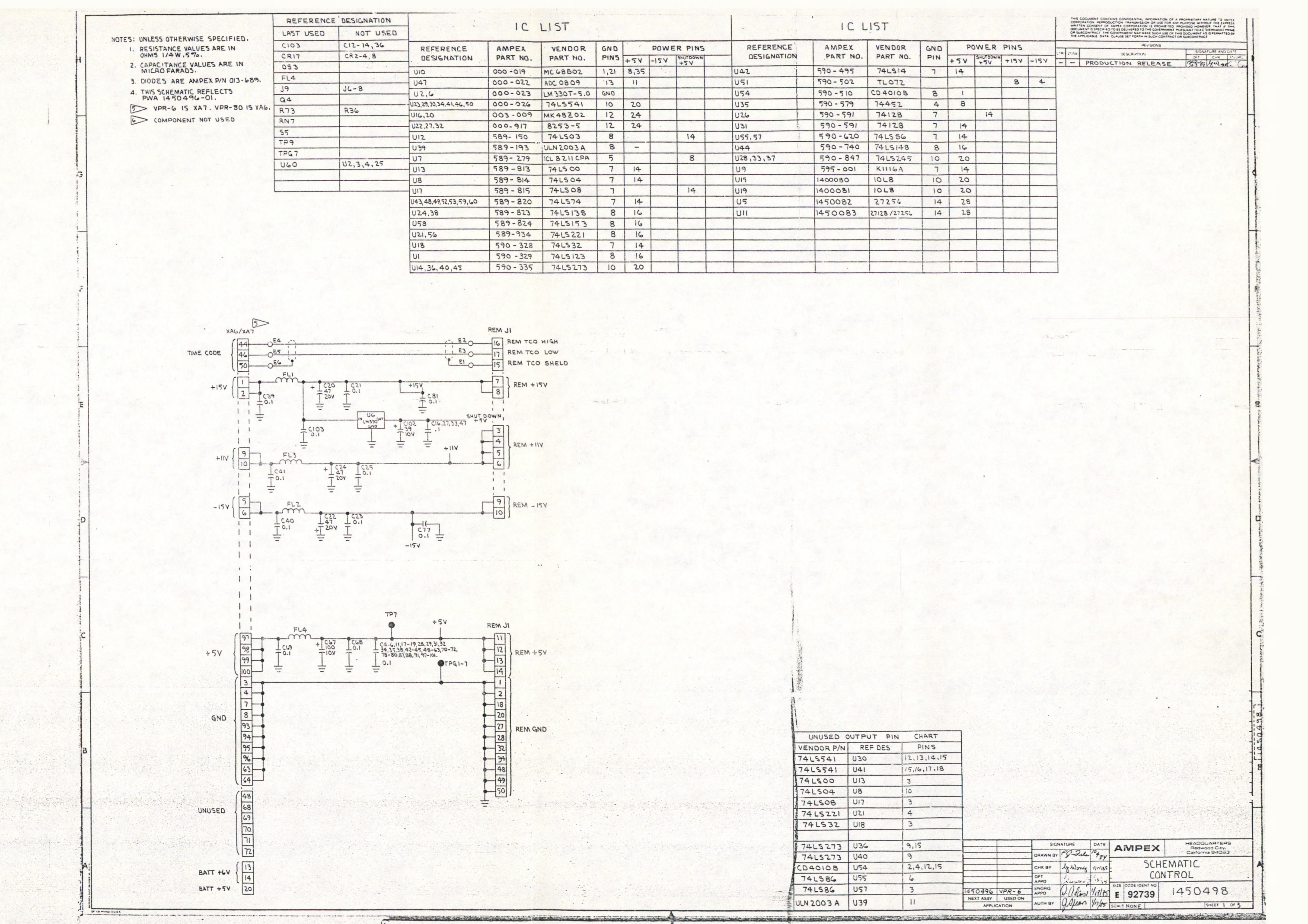
VPR-6 SCHEMATICS NTSC

Ampex Corporation

VPR-6 (NTSC)

NUMERICAL LIST OF SCHEMATICS

SCHEMATIC NO.	REV	TITLE
1400217	D	PRE AMPLIFIER
1450246	D,E	EQUAL/DEMOD
1450319	C	EQUAL/DEMOD - SYNC
1450332	D	AUDIO PREAMP
1450336	F	AUDIO
1450358	H	REFERENCE 625
1450402	A	SERIAL REMOTE
1450407	F	SCHEMATIC AUDIO
1450412	D	TIME CODE SYSTEM
1450442	C	SCHEMATIC AST SERVO, NON-SYNC
1450451	C	SERVO
1450454	C	SCHEMATIC AUDIO PREAMP
1450498	-,A	CONTROL
1450551	-,B	VOLTAGE REGULATOR
1450595	C,D	REEL M.D.A.
1450722	C	SYSTEM INTERCONNECT
1465485	-	CONSOLE MONITOR AMP
1465490	-	MONITOR AMPLIFIER



REFERENCE DESIGNATION	
LAST USED	NOT USED
C103	C12-14, 36
CR17	CR2-4, 8
DS3	
FL4	
J9	J6-8
Q4	
R73	R36
RN7	
S5	
TP9	
TPG7	
U60	U2, 3, 4, 25

IC LIST

REFERENCE DESIGNATION	AMPEX PART NO.	VENDOR PART NO.	GND PINS	POWER PINS +5V	POWER PINS -15V	POWER PINS SHUTDOWN +5V
U10	000-019	MC68B02	1,21	8,35		
U47	000-022	ADC 0809	13	11		
U2,6	000-023	LM330T-5.0	GND			
U23,29,30,34,41,46,50	000-026	74LS541	10	20		
U16,20	003-009	MK48Z02	12	24		
U22,27,32	000-917	8253-5	12	24		
U12	589-150	74LS03	8			14
U39	589-193	ULN2003A	8	–		
U7	589-279	ICL 8211 CPA	5			8
U13	589-813	74LS00	7	14		
U8	589-814	74LS04	7	14		
U17	589-815	74LS08	7			14
U43,48,49,52,53,59,60	589-820	74LS74	7	14		
U24,38	589-823	74LS138	8	16		
U58	589-824	74LS153	8	16		
U21,56	589-934	74LS221	8	16		
U18	590-328	74LS32	7	14		
U1	590-329	74LS123	8	16		
U14,36,40,45	590-335	74LS273	10	20		

IC LIST

REFERENCE DESIGNATION	AMPEX PART NO.	VENDOR PART NO.	GND PIN	POWER PINS +5V	POWER PINS SHUTDOWN +5V	POWER PINS +15V	POWER PINS -15V
U42	590-495	74LS14	7	14			
U51	590-502	TL072				8	4
U54	590-510	CD4010B	8	1			
U35	590-579	74452	4	8			
U26	590-591	74128	7		14		
U31	590-591	74128	7	14			
U55,57	590-620	74LS86	7	14			
U44	590-740	74LS148	8	16			
U28,33,37	590-847	74LS245	10	20			
U9	595-001	K1116A	7	14			
U15	1400080	10L8	10	20			
U19	1400081	10L8	10	20			
U5	1450082	27256	14	28			
U11	1450083	27128/27256	14	28			

REVISIONS

LTR	ZONE	DESCRIPTION	SIGNATURE AND DATE
–	–	PRODUCTION RELEASE	

UNUSED OUTPUT PIN CHART		
VENDOR P/N	REF DES	PINS
74LS541	U30	12,13,14,15
74LS541	U41	15,16,17,18
74LS00	U13	3
74LS04	U8	10
74LS08	U17	3
74LS221	U21	4
74LS32	U18	3
74LS273	U36	9,15
74LS273	U40	9
CD4010B	U54	2,4,12,15
74LS86	U55	6
74LS86	U57	3
ULN2003A	U39	11

NEXT ASSY	USED ON
1450496	VPR-6

APPLICATION

	SIGNATURE	DATE
DRAWN BY	P.G. Dale	10/4/84
CHK BY	Wong	1/17/85
DFT APPD		
ENGRG APPD	D. Adams	1/18/85
AUTH BY	J. Spears	1/17/85

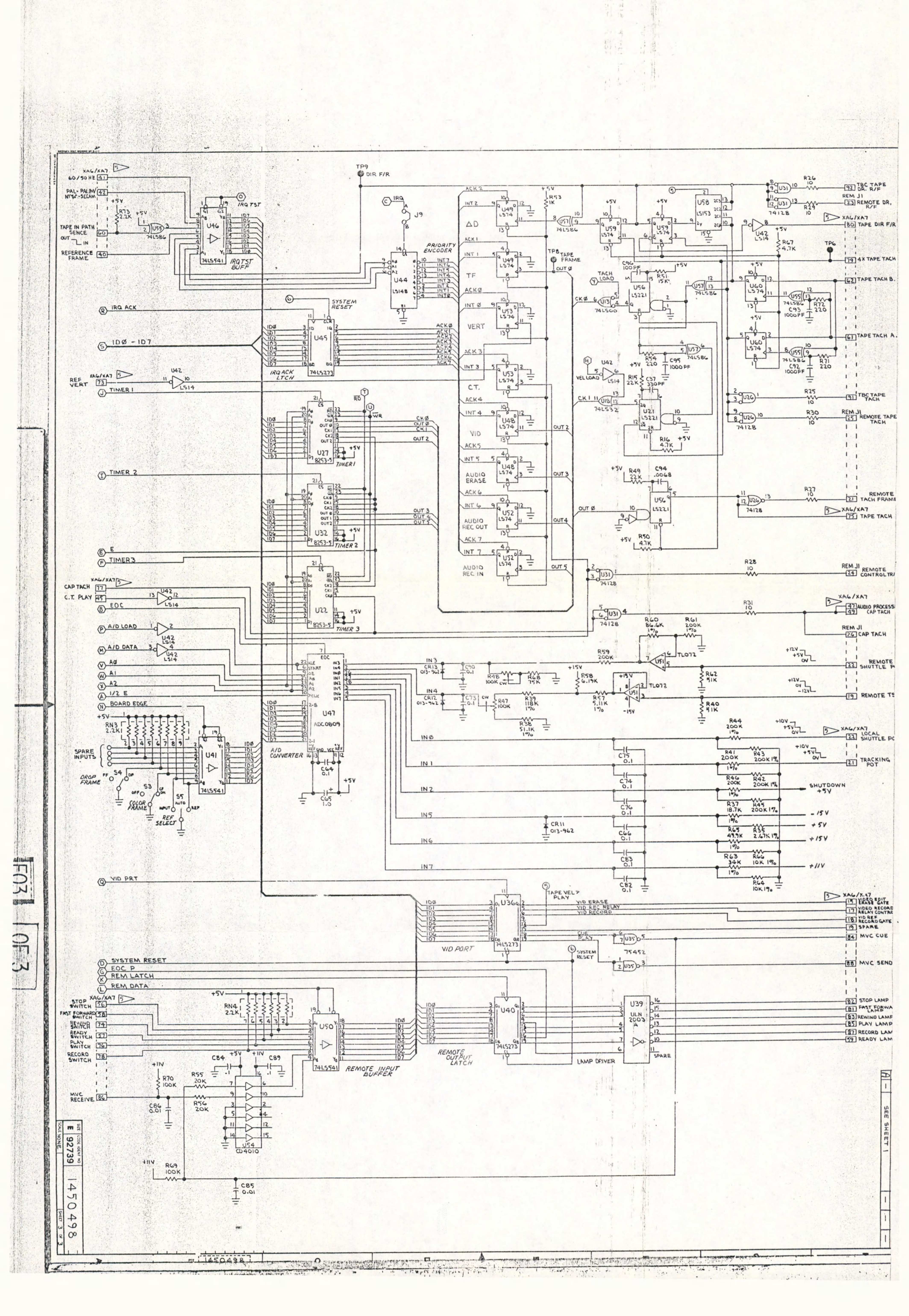
AMPEX HEADQUARTERS Redwood City, California 94063

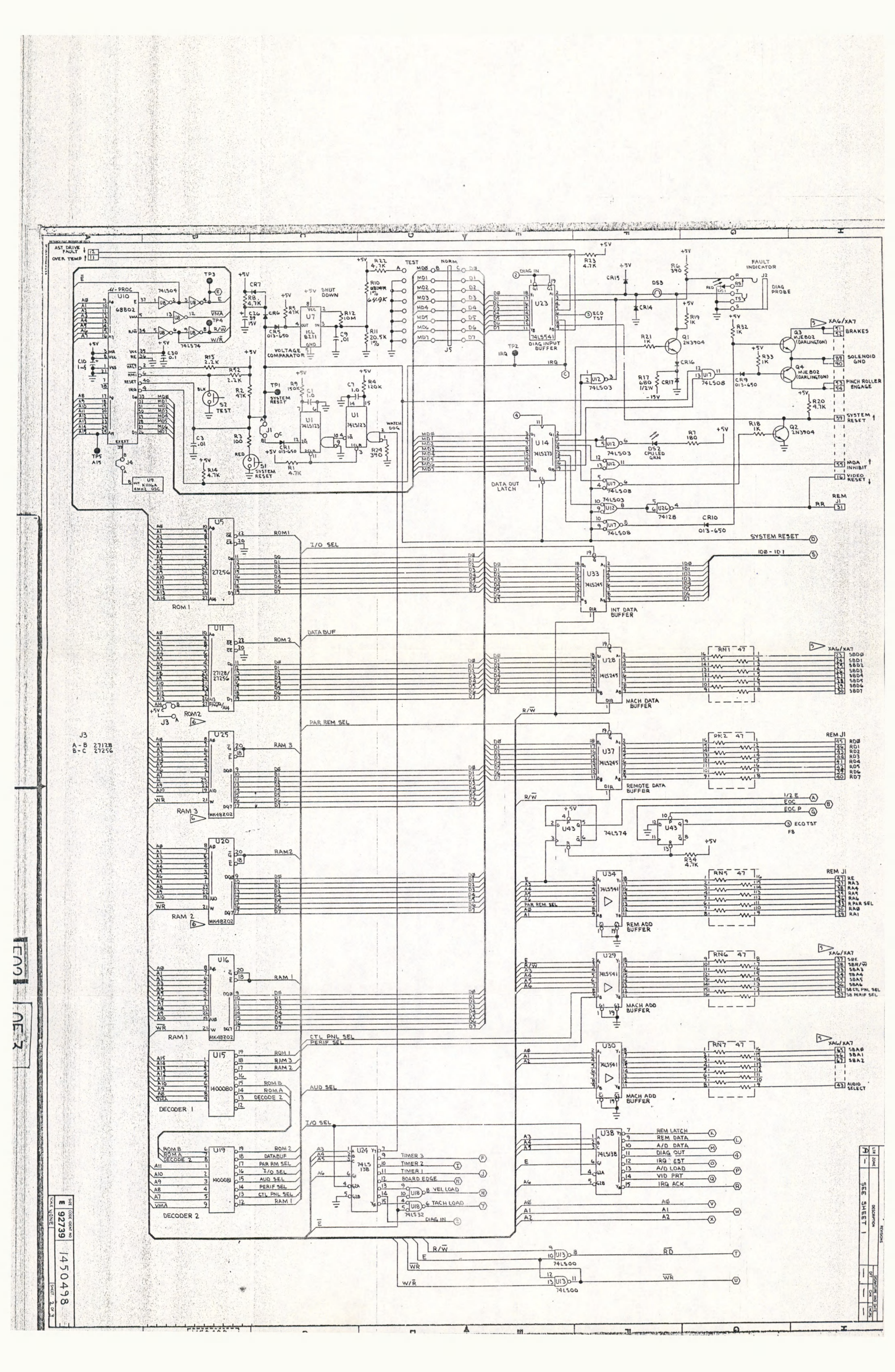
SCHEMATIC CONTROL

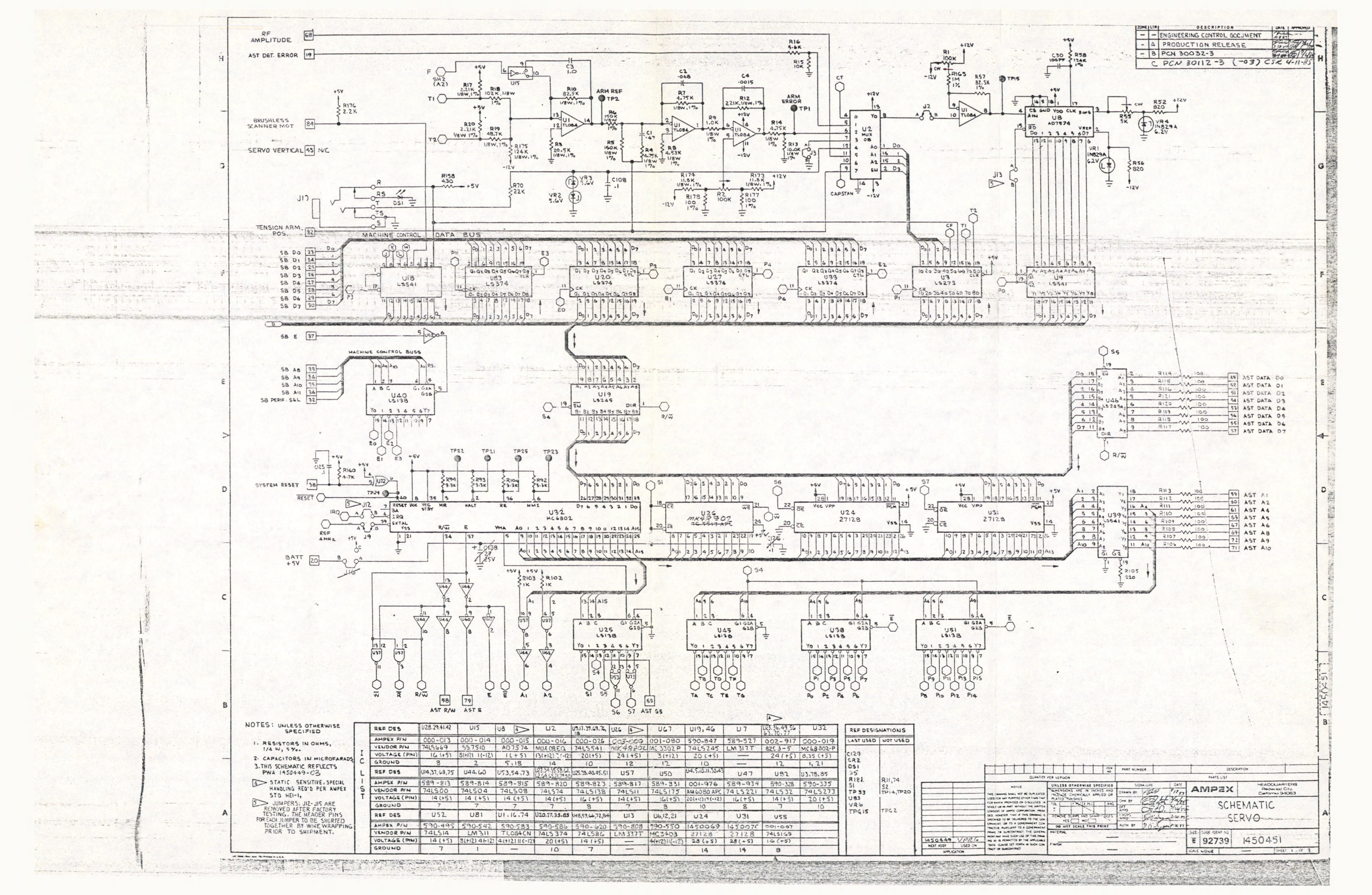
SIZE E CODE IDENT NO 92739 1450498

SCALE NONE SHEET 1 OF 3

FOL OF 3


SEE SHEET 1
E
92739
1450498
SHEET 3 OF 3
F03
OF 3


SEE SHEET 1
U10 68802 µ-PROC
U23 74LS541 DIAG INPUT BUFFER
U14 74LS273 DATA OUT LATCH
U33 74LS245 INT DATA BUFFER
U28 74LS245 MACH DATA BUFFER
U37 74LS245 REMOTE DATA BUFFER
U34 74LS541 REM ADD BUFFER
U29 74LS541 MACH ADD BUFFER
U30 74LS541 MACH ADD BUFFER
U38 74LS138
U24 74LS138
U5 27256 ROM 1
U11 27128/27256
U25 MK48Z02 RAM 3
U20 MK48Z02 RAM 2
U16 MK48Z02 RAM 1
U15 1400080 DECODER 1
U19 1400081 DECODER 2
U7 ICL 8211 VOLTAGE COMPARATOR
U1 74LS123 WATCH DOG
J3 A-B 27128 B-C 27256
SYSTEM RESET
FAULT INDICATOR
DIAG PROBE
BRAKES
SOLENOID GND
PINCH ROLLER ENGAGE
MDA INHIBIT
VIDEO RESET
REM LATCH
REM DATA
A/D DATA
DIAG OUT
IRQ EST
A/D LOAD
VID PRT
IRQ ACK
TIMER 3
TIMER 2
TIMER 1
BOARD EDGE
VEL LOAD
TACH LOAD
AUDIO SELECT
92739
1450498



NOTES: UNLESS OTHERWISE SPECIFIED

1. RESISTORS IN OHMS, 1/4 W, 5%.
2. CAPACITORS IN MICROFARADS.
3. THIS SCHEMATIC REFLECTS PWA 1450449-03

4 STATIC SENSITIVE, SPECIAL HANDLING REQ'D PER AMPEX STD HEI-1,

5 JUMPERS: J12-J15 ARE REMOVED AFTER FACTORY TESTING. THE HEADER PINS FOR EACH JUMPER TO BE SHORTED TOGETHER BY WIREWRAPPING PRIOR TO SHIPMENT.

IC LIST

REF DES	U28,29,41,42	U15	U8 4	U2	U9,17,39,69,76,18	U26 4	U67	U19, 46	U7	U23,36,49,56,63,70,77 4	U32
AMPEX P/N	000-013	000-014	000-015	000-016	000-026	003-009	001-080	590-847	589-527	002-917	000-019
VENDOR P/N	74LS669	SS7510	AD7574	MUX08EQ	74LS541	MK48Z02	MC3302P	74LS245	LM317T	8253-5	MC68802-P
VOLTAGE (PIN)	16 (+5)	8(+12) 1(-12)	1(+5)	13(+12) [illegible](-12)	20(+5)	24(+5)	3(+12)	20 (+5)	—	24 (+5)	8,35 (+5)
GROUND	8	2	5,18	14	10	12	12	10	—	12	1, 21
REF DES	U14,37,68,75	U44,60	U53,54,73	U22,34,35,58,61,62,64,65,71,79,80	U25,38,40,45,51	U57	U50	U4,5,10,11,30,43	U47	U82	U3,78,85
AMPEX P/N	589-813	589-814	589-815	589-820	589-823	589-817	589-331	001-976	589-934	590-328	590-335
VENDOR P/N	74LS00	74LS04	74LS08	74LS74	74LS138	74LS11	74LS175	AM6080APC	74LS221	74LS32	74LS273
VOLTAGE (PIN)	14 (+5)	14 (+5)	14 (+5)	14 (+5)	16 (+5)	14 (+5)	16 (+5)	20(+12) 17(-12)	16 (+5)	14 (+5)	20 (+5)
GROUND	7	7	7	7	8	7	8	10	8	7	10
REF DES	U52	U81	U1,16,74	U20,27,33,83	U48,59,66,72,84	U13	U6,12,21	U24	U31	U55	
AMPEX P/N	590-495	590-542	590-583	590-586	590-620	590-808	590-550	1450069	1450070	001-087	
VENDOR P/N	74LS14	LM311	TL084CN	74LS374	74LS86	LM337T	MC3403	27128	27128	74LS169	
VOLTAGE (PIN)	14 (+5)	8(+12) 4(-12)	4(+12) 11(-12)	20 (+5)	14 (+5)	—	4(+12) 11(-12)	28 (+5)	28 (+5)	16 (+5)	
GROUND	7	1	—	10	7	—		14	14	8	

REF DESIGNATIONS

LAST USED	NOT USED
C129	
CR2	
DS1	
J15	
R181	R11,74
S1	S2
TP33	TP14,TP20
U83	
VR6	
TPG15	TPG2

ZONE	LTR	DESCRIPTION	DATE	APPROVED
—	—	ENGINEERING CONTROL DOCUMENT		
-	A	PRODUCTION RELEASE		
-	B	PCN 30032-3		
	C	PCN 30112-3 (-03) CSR 4-11-85		

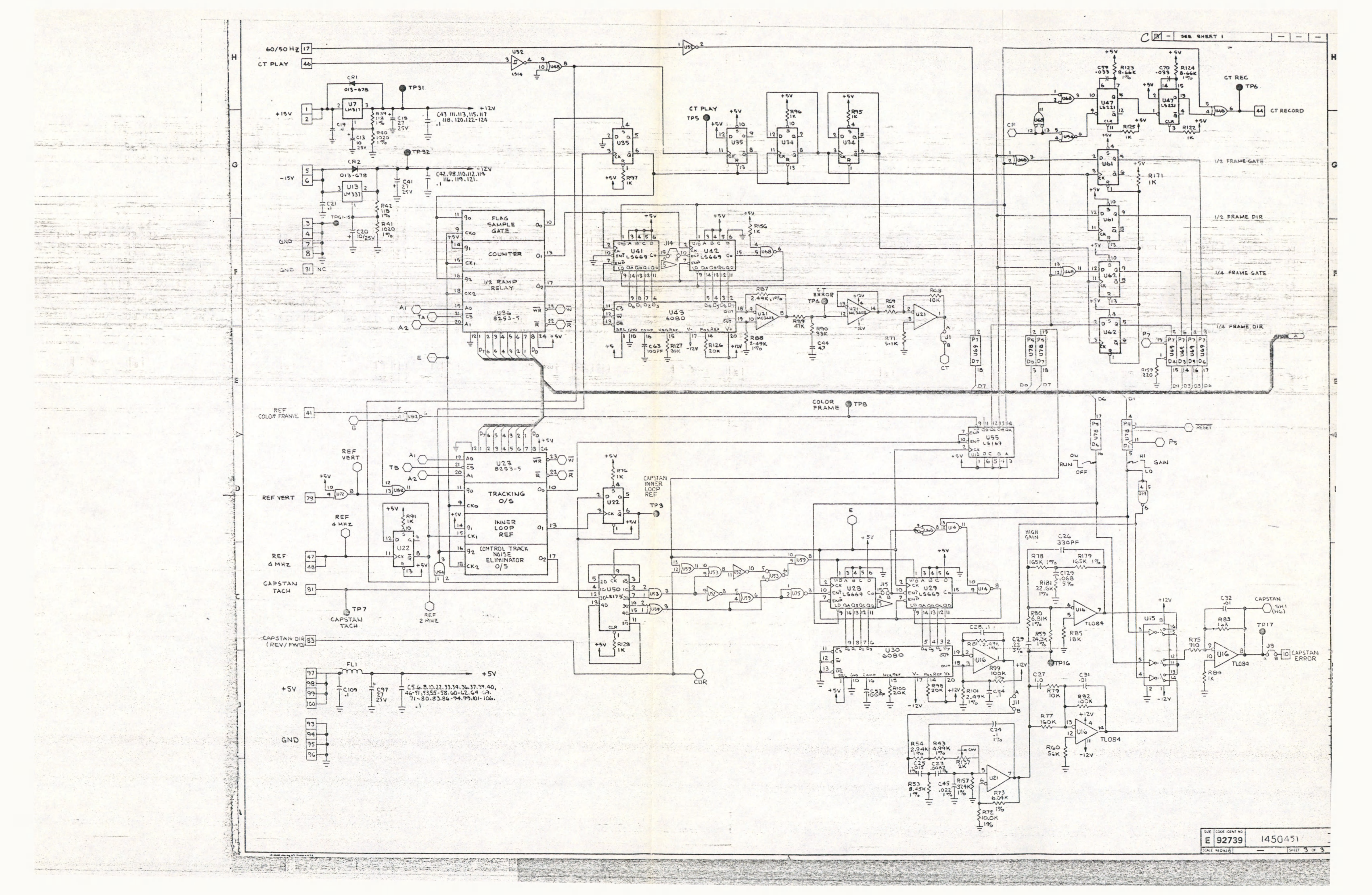
1450449 VPBG
NEXT ASSY USED ON
APPLICATION

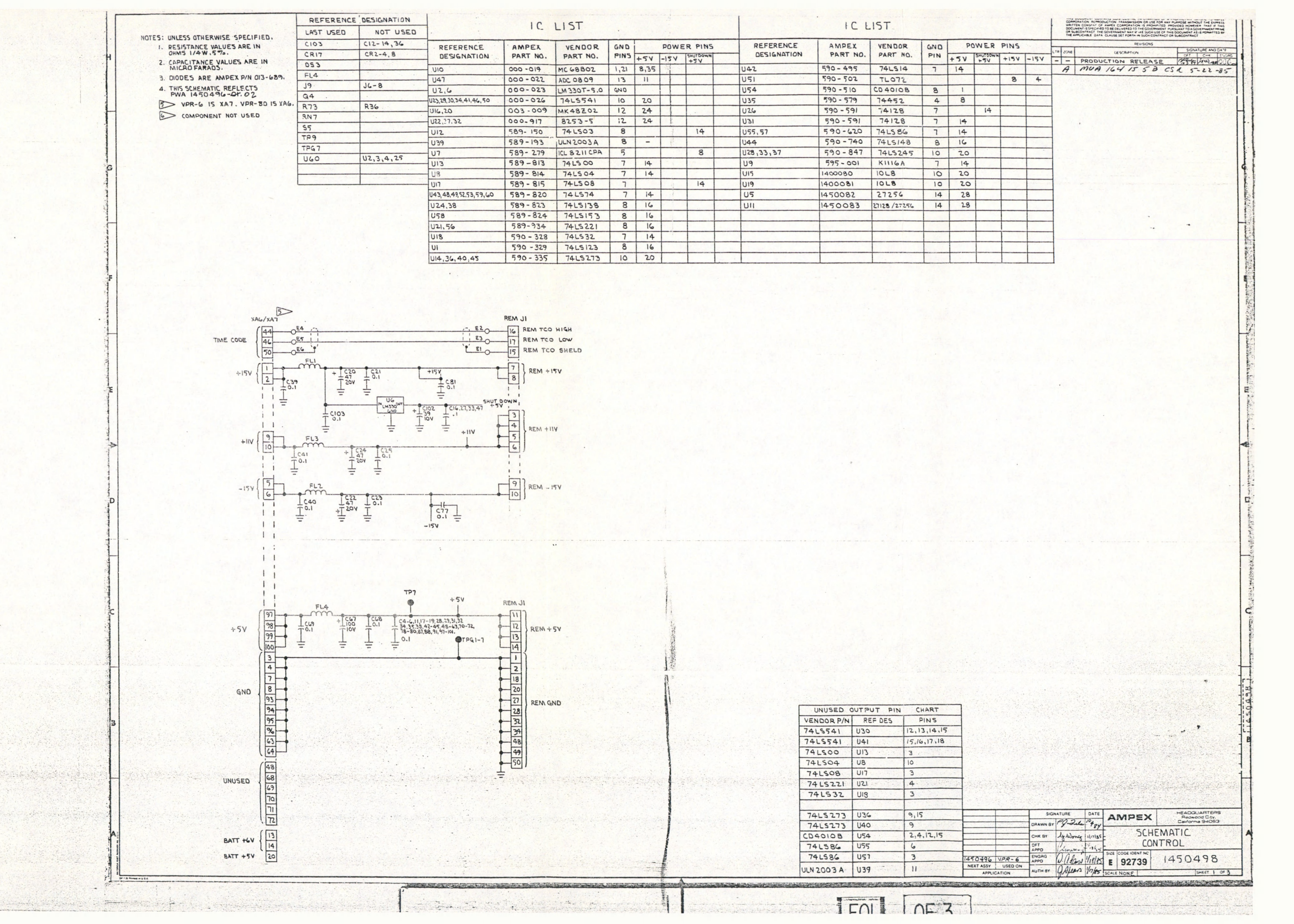
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES
REMOVE BURRS AND SHARP EDGES YES NO
DO NOT SCALE THIS PRINT

AMPEX
HEADQUARTERS Redwood City, California 94063

SCHEMATIC
SERVO

SIZE E CODE IDENT NO 92739 1450451
SCALE NONE SHEET 1 OF 3


60/50 Hz
CT PLAY
+15V
-15V
GND
CT PLAY
CT REC
CT RECORD
1/2 FRAME GATE
1/2 FRAME DIR
1/4 FRAME GATE
1/4 FRAME DIR
FLAG SAMPLE GATE
COUNTER
1/2 RAMP RELAY
8253-5
CT ERROR
COLOR FRAME
REF COLOR FRAME
REF VERT
TRACKING O/S
INNER LOOP REF
CONTROL TRACK NOISE ELIMINATOR O/S
CAPSTAN INNER LOOP REF
REF 4 MHZ
CAPSTAN TACH
REF 2 MHZ
CAPSTAN DIR (REV/FWD)
CDR
RESET
RUN
GAIN
HIGH GAIN
CAPSTAN
CAPSTAN ERROR
TL084
+5V
GND
E 92739
1450451
SHEET 3 OF 3



NOTES: UNLESS OTHERWISE SPECIFIED.
1. RESISTANCE VALUES ARE IN OHMS 1/4W, 5%.
2. CAPACITANCE VALUES ARE IN MICROFARADS.
3. DIODES ARE AMPEX P/N 013-689.
4. THIS SCHEMATIC REFLECTS PWA 1450496-01.02

5 VPR-6 IS XA7. VPR-80 IS XA6.

6 COMPONENT NOT USED

REFERENCE DESIGNATION	
LAST USED	NOT USED
C103	C12-14, 36
CR17	CR2-4, 8
DS3	
FL4	
J9	J6-8
Q4	
R73	R36
RN7	
S5	
TP9	
TPG7	
U60	U2, 3, 4, 25

IC LIST

REFERENCE DESIGNATION	AMPEX PART NO.	VENDOR PART NO.	GND PINS	POWER PINS +5V	POWER PINS -15V	POWER PINS SHUTDOWN +5V	
U10	000-019	MC68B02	1,21	8,35			
U47	000-022	ADC 0809	13	11			
U2,6	000-023	LM330T-5.0	GND				
U23,29,30,34,41,46,50	000-026	74LS541	10	20			
U16,20	003-009	MK48Z02	12	24			
U22,27,32	000-917	8253-5	12	24			
U12	589-150	74LS03	8			14	
U39	589-193	ULN2003A	8	-			
U7	589-279	ICL 8211 CPA	5			8	
U13	589-813	74LS00	7	14			
U8	589-814	74LS04	7	14			
U17	589-815	74LS08	7			14	
U43,48,49,52,53,59,60	589-820	74LS74	7	14			
U24,38	589-823	74LS138	8	16			
U58	589-824	74LS153	8	16			
U21,56	589-934	74LS221	8	16			
U18	590-328	74LS32	7	14			
U1	590-329	74LS123	8	16			
U14,36,40,45	590-335	74LS273	10	20			

IC LIST

REFERENCE DESIGNATION	AMPEX PART NO.	VENDOR PART NO.	GND PIN	POWER PINS +5V	POWER PINS SHUTDOWN +5V	POWER PINS +15V	POWER PINS -15V
U42	590-495	74LS14	7	14			
U51	590-502	TL072				8	4
U54	590-510	CD4010B	8	1			
U35	590-579	74452	4	8			
U26	590-591	74128	7		14		
U31	590-591	74128	7	14			
U55,57	590-620	74LS86	7	14			
U44	590-740	74LS148	8	16			
U28,33,37	590-847	74LS245	10	20			
U9	595-001	K1116A	7	14			
U15	1400080	10L8	10	20			
U19	1400081	10L8	10	20			
U5	1450082	27256	14	28			
U11	1450083	27128/27256	14	28			

REVISIONS					
LTR	ZONE	DESCRIPTION	SIGNATURE AND DATE DFT	CHK	ENGRG
-	-	PRODUCTION RELEASE	[illegible]	[illegible]	[illegible]
	A	MUA 164 15 5 B CSR 5-22-85			

UNUSED OUTPUT PIN CHART		
VENDOR P/N	REF DES	PINS
74LS541	U30	12,13,14,15
74LS541	U41	15,16,17,18
74LS00	U13	3
74LS04	U8	10
74LS08	U17	3
74LS221	U21	4
74LS32	U18	3
74LS273	U36	9,15
74LS273	U40	9
CD4010B	U54	2,4,12,15
74LS86	U55	6
74LS86	U57	3
ULN2003A	U39	11

NEXT ASSY	USED ON
1450496	VPR-6
APPLICATION	

	SIGNATURE	DATE
DRAWN BY	[signature]	10/4/84
CHK BY	[signature]	1/17/85
DFT APPD	[signature]	1/17/85
ENGRG APPD	[signature]	1/18/85
AUTH BY	[signature]	1/17/85

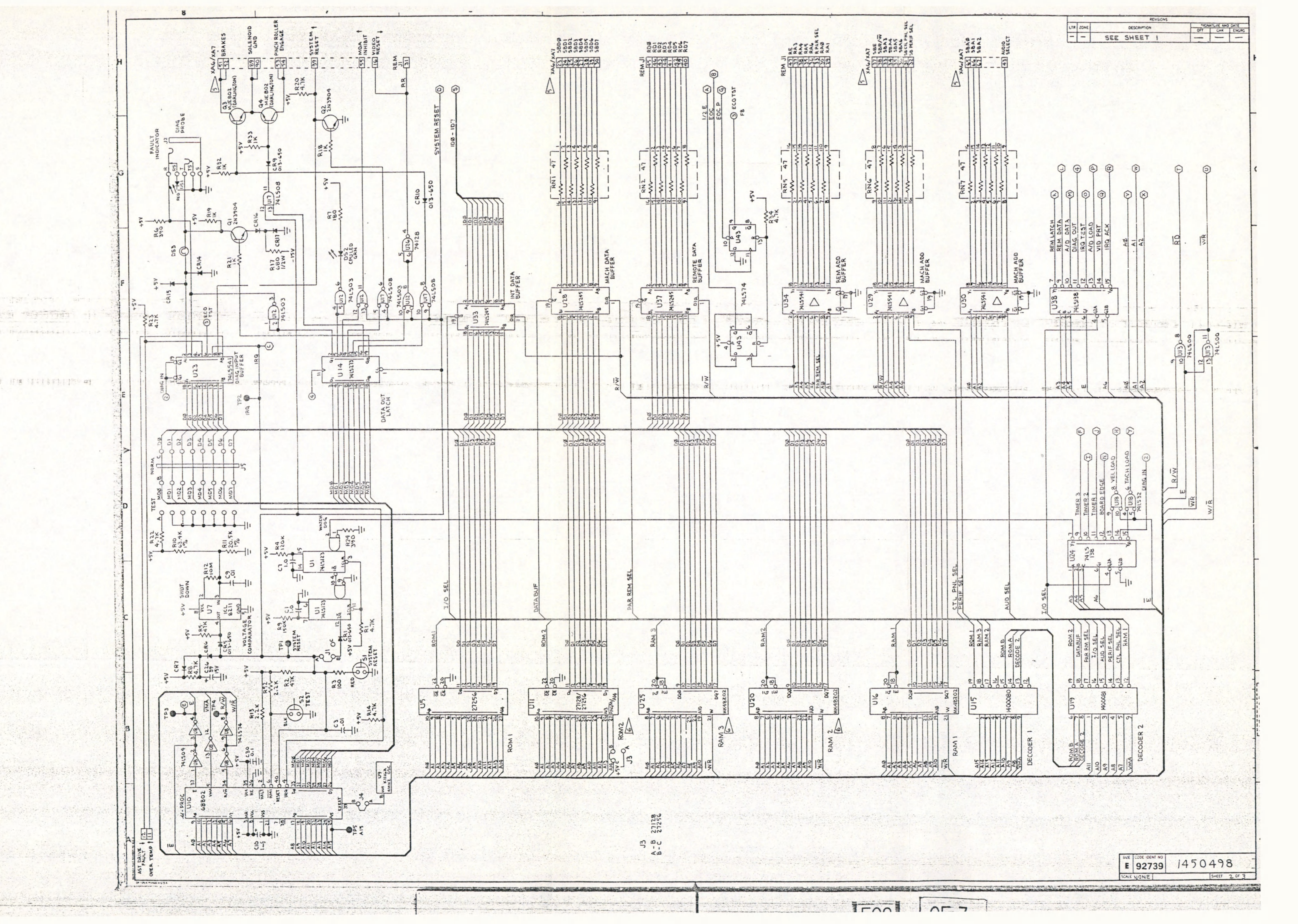
AMPEX — HEADQUARTERS Redwood City, California 94063

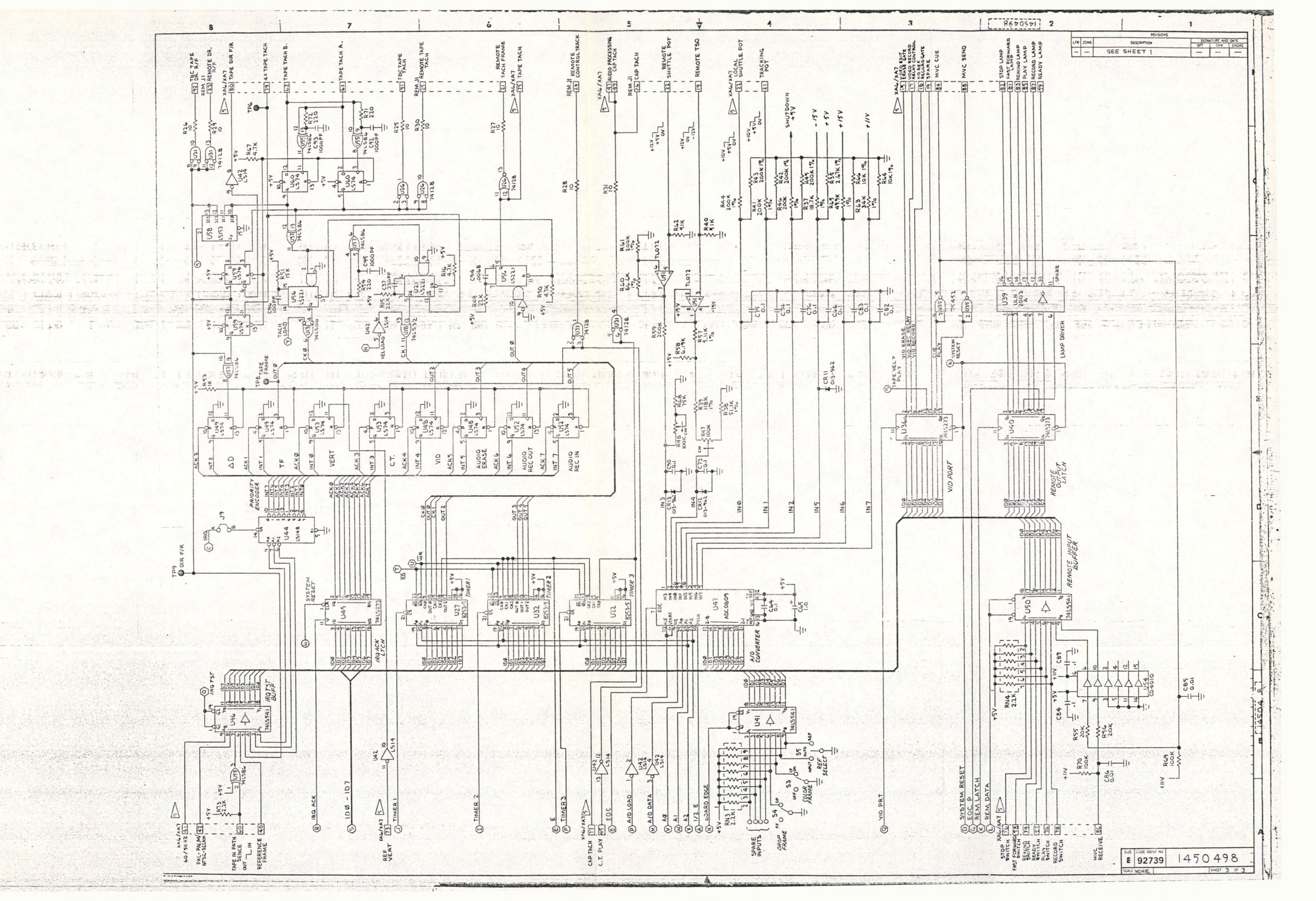
SCHEMATIC CONTROL

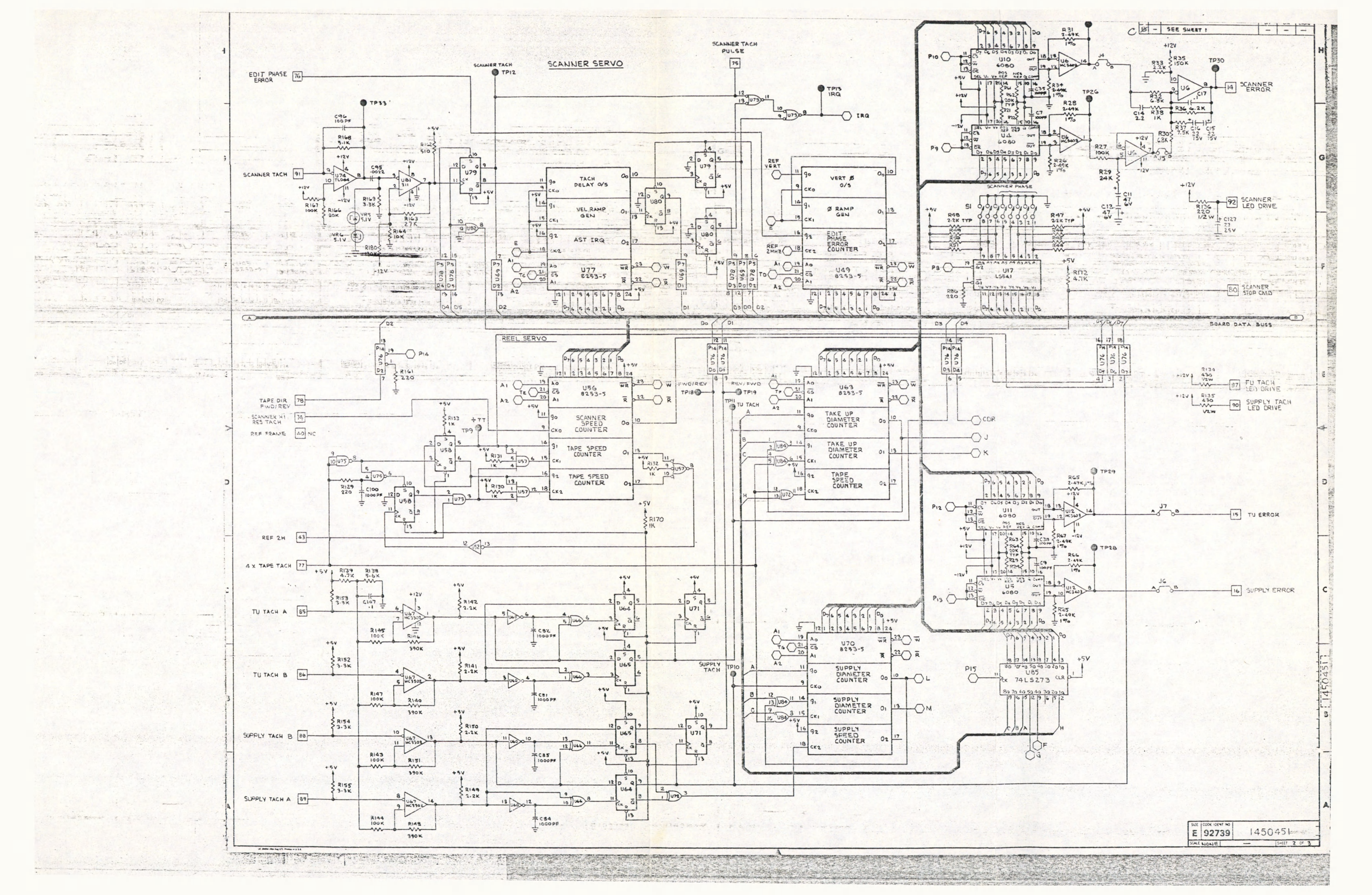
SIZE E | CODE IDENT NO 92739 | 1450498

SCALE NONE | SHEET 1 OF 3

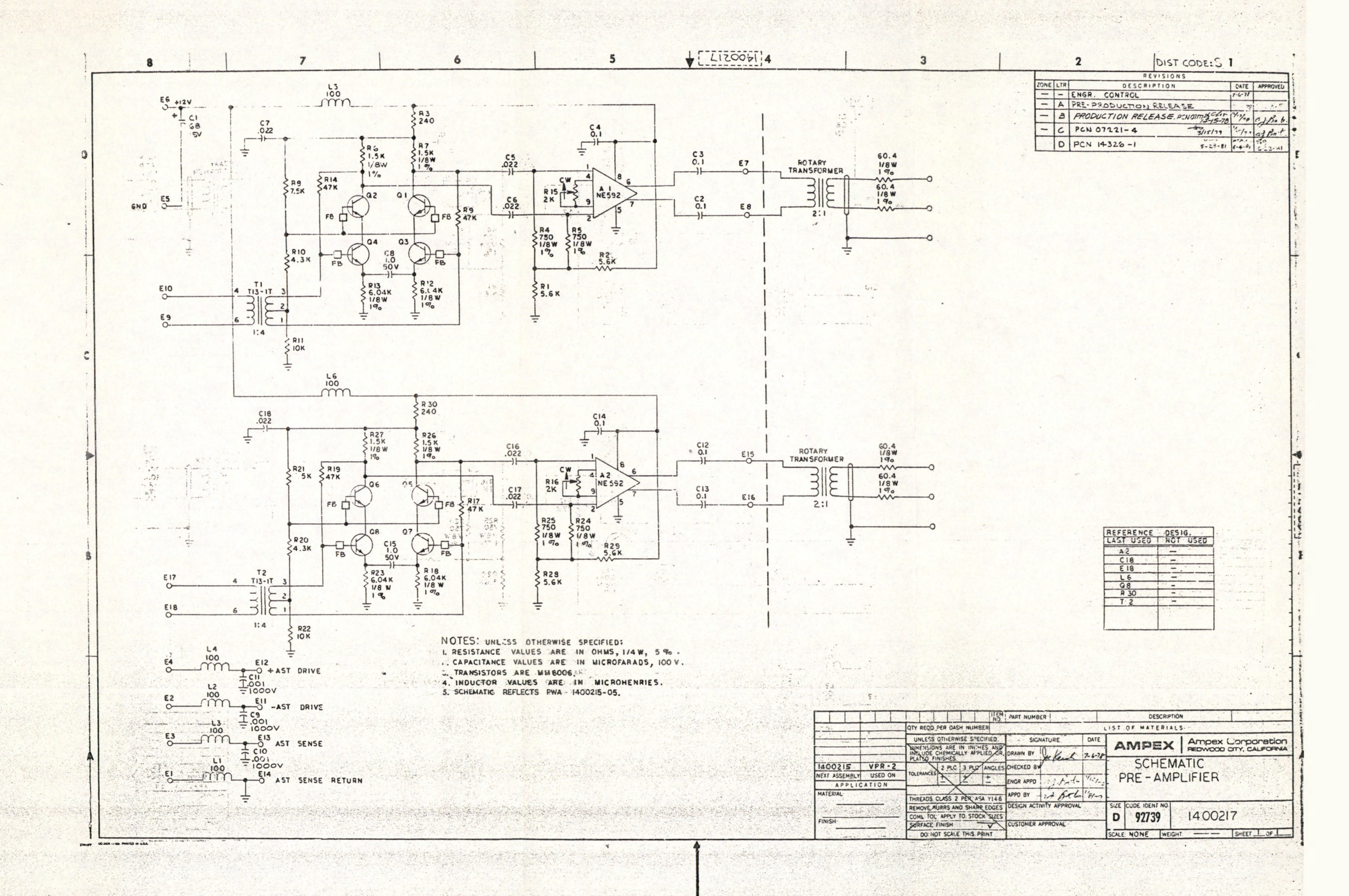
FOL OF 3


REVISIONS
LTR
ZONE
DESCRIPTION
SIGNATURE AND DATE
SEE SHEET 1
SIZE
E
CODE IDENT NO
92739
1450498
SCALE NONE
SHEET 2 OF 3

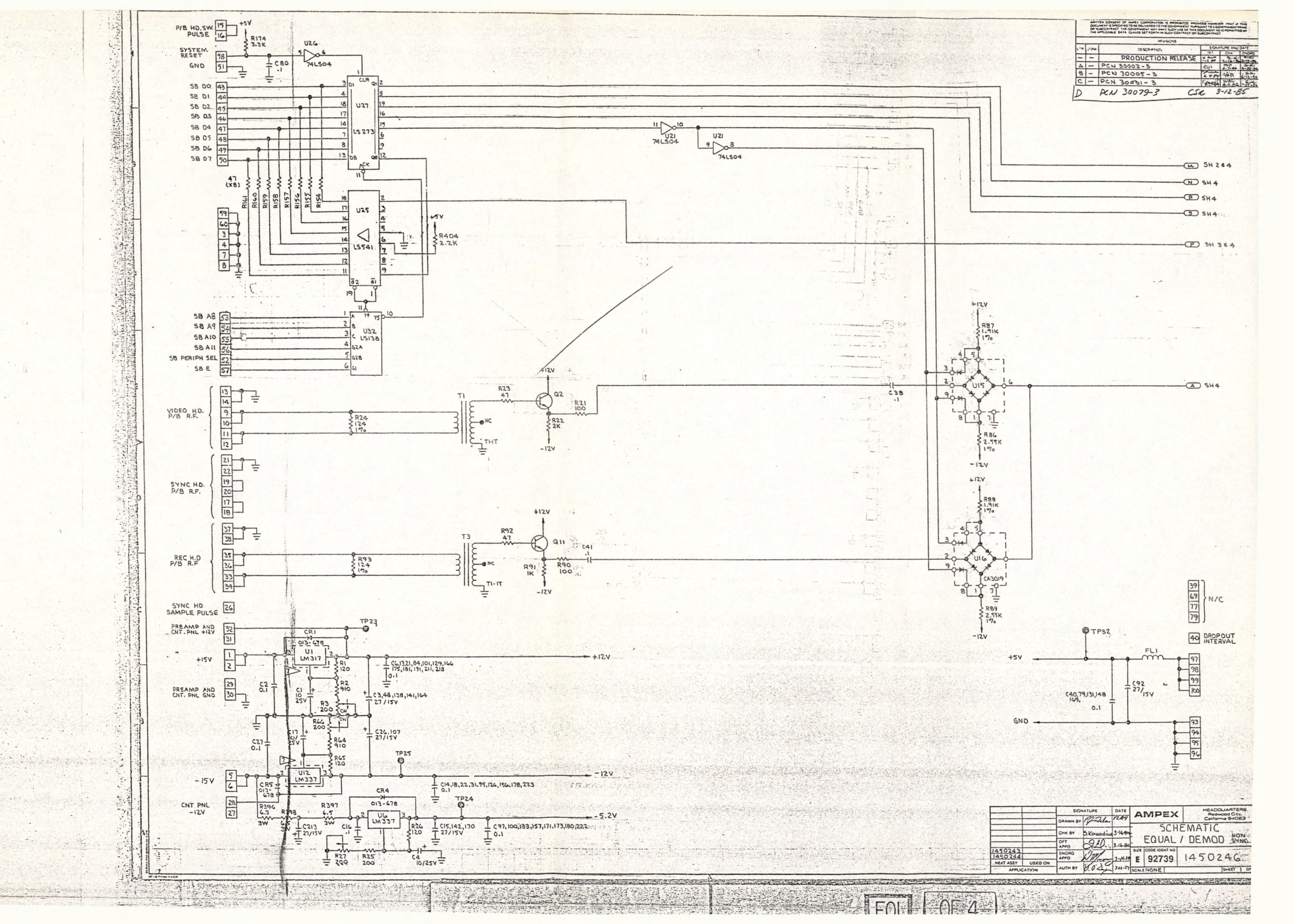

8
7
6
5
4
3
2
1
REVISIONS
LTR
ZONE
DESCRIPTION
SIGNATURE AND DATE
SEE SHEET 1
PRIORITY ENCODER
IRQ ACK LTCH
TIMER 1
TIMER 2
TIMER 3
A/D CONVERTER
ADC0809
VID PORT
REMOTE OUTPUT LATCH
REMOTE INPUT BUFFER
LAMP DRIVER
IRQ TST BUFF
SPARE INPUTS
DROP FRAME
REF SELECT
STOP LAMP
PLAY LAMP
RECORD LAMP
READY LAMP
MVC SEND
MVC CUE
MVC RECEIVE
TRACKING POT
LOCAL SHUTTLE POT
REMOTE TSO
REMOTE SHUTTLE POT
CAP TACH
REMOTE TAPE TACH
TAPE TACH A.
TAPE TACH B.
4X TAPE TACH
TAPE DIR F/R
SYSTEM RESET
EOC P
REM LATCH
REM DATA
REF VERT
REFERENCE FRAME
C.T. PLAY
A/D LOAD
A/D DATA
VID PRT
SHUTDOWN
SIZE
CODE IDENT NO
E
92739
1450498
SCALE NONE
SHEET 3 OF 3



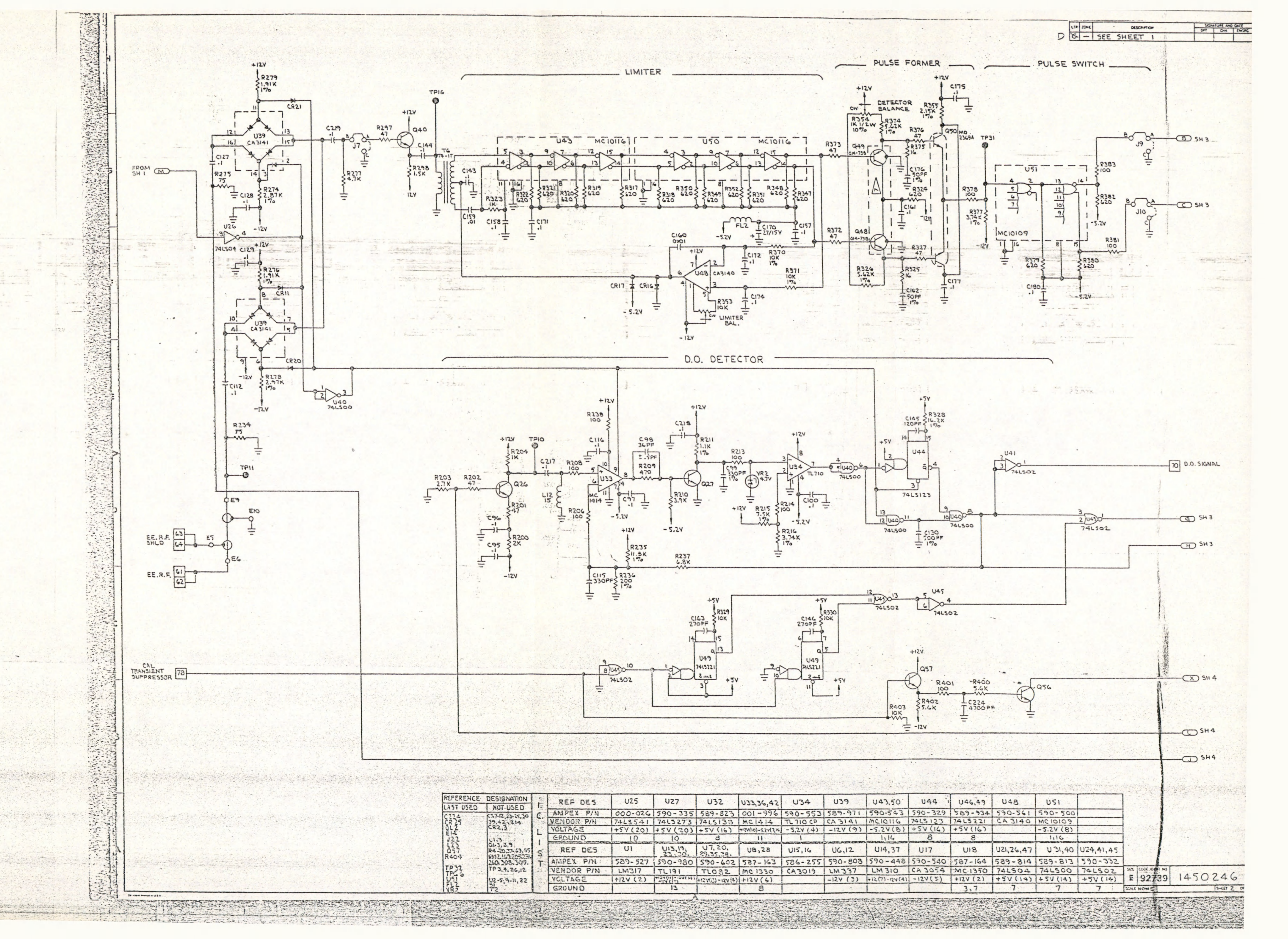
SCANNER SERVO
EDIT PHASE ERROR
SCANNER TACH
SCANNER TACH PULSE
IRQ
TACH DELAY O/S
VEL RAMP GEN
AST IRQ
U77 8253-5
REF VERT
VERT Ø O/S
Ø RAMP GEN
EDIT PHASE ERROR COUNTER
U49 8253-5
U10 6080
U4 6080
SCANNER ERROR
SCANNER PHASE
U17 LS541
SCANNER LED DRIVE
SCANNER STOP CMD
BOARD DATA BUSS
REEL SERVO
TAPE DIR FWD/REV
SCANNER HI RES TACH
REF FRAME
U56 8253-5
SCANNER SPEED COUNTER
TAPE SPEED COUNTER
U63 8253-5
TAKE UP DIAMETER COUNTER
TAKE UP SPEED COUNTER
FU TACH LED DRIVE
SUPPLY TACH LED DRIVE
U11 6080
TU ERROR
U5 6080
SUPPLY ERROR
REF 2H
4 X TAPE TACH
TU TACH A
TU TACH B
SUPPLY TACH B
SUPPLY TACH A
SUPPLY TACH
U70 8253-5
SUPPLY DIAMETER COUNTER
SUPPLY SPEED COUNTER
U85 74LS273
E 92739 1450451
SHEET 2 OF 3



DIST CODE: S 1
1400217
REVISIONS
ZONE | LTR | DESCRIPTION | DATE | APPROVED
— | — | ENGR. CONTROL | 7-6-78
— | A | PRE-PRODUCTION RELEASE
— | B | PRODUCTION RELEASE
— | C | PCN 07221-4
— | D | PCN 14326-1 | 5-29-81
E6 +12V
C1 68 5V
E5 GND
L3 100
C7 .022
R3 240
R6 1.5K 1/8W 1%
R7 1.5K 1/8W 1%
R8 7.5K
R14 47K
Q2
Q1
R9 47K
Q4
Q3
FB
R10 4.3K
C8 1.0 50V
R13 6.04K 1/8W 1%
R12 6.04K 1/8W 1%
E10
E9
T1 T13-1T
1:4
R11 10K
C5 .022
C6 .022
C4 0.1
CW
R15 2K
A1 NE592
R4 750 1/8W 1%
R5 750 1/8W 1%
R2 5.6K
R1 5.6K
C3 0.1
C2 0.1
E7
E8
ROTARY TRANSFORMER
2:1
60.4 1/8W 1%
L6 100
C18 .022
R30 240
R27 1.5K 1/8W 1%
R26 1.5K 1/8W 1%
R21 5K
R19 47K
Q6
Q5
R17 47K
Q8
Q7
R20 4.3K
C15 1.0 50V
R23 6.04K 1/8W 1%
R18 6.04K 1/8W 1%
E17
E18
T2 T13-1T
1:4
R22 10K
C16 .022
C17 .022
C14 0.1
R16 2K
A2 NE592
R25 750 1/8W 1%
R24 750 1/8W 1%
R29 5.6K
R28 5.6K
C12 0.1
C13 0.1
E15
E16
E4 L4 100 E12 +AST DRIVE
C11 .001 1000V
E2 L2 100 E11 -AST DRIVE
C9 .001 1000V
E3 L3 100 E13 AST SENSE
C10 .001 1000V
E1 L1 100 E14 AST SENSE RETURN
NOTES: UNLESS OTHERWISE SPECIFIED:
1. RESISTANCE VALUES ARE IN OHMS, 1/4W, 5%.
2. CAPACITANCE VALUES ARE IN MICROFARADS, 100V.
3. TRANSISTORS ARE MM8006.
4. INDUCTOR VALUES ARE IN MICROHENRIES.
5. SCHEMATIC REFLECTS PWA 1400215-05.
REFERENCE DESIG.
LAST USED | NOT USED
A2 | —
C18 | —
E18 | —
L6 | —
Q8 | —
R30 | —
T2 | —
ITEM NO. | PART NUMBER | DESCRIPTION
QTY REQD PER DASH NUMBER
LIST OF MATERIALS
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES.
TOLERANCES 2 PLC 3 PLC ANGLES
THREADS CLASS 2 PER ASA Y14.6
REMOVE BURRS AND SHARP EDGES
CONC. TOL. APPLY TO STOCK SIZES
SURFACE FINISH
DO NOT SCALE THIS PRINT
1400215 VPR-2
NEXT ASSEMBLY USED ON
APPLICATION
MATERIAL
FINISH
SIGNATURE DATE
DRAWN BY 7-6-78
CHECKED BY
ENGR APPD
APPD BY
DESIGN ACTIVITY APPROVAL
CUSTOMER APPROVAL
AMPEX Ampex Corporation REDWOOD CITY, CALIFORNIA
SCHEMATIC PRE-AMPLIFIER
SIZE D CODE IDENT NO. 92739 1400217
SCALE NONE WEIGHT SHEET 1 OF 1



P/B HD.SW. PULSE
SYSTEM RESET
GND
SB D0
SB D1
SB D2
SB D3
SB D4
SB D5
SB D6
SB D7
U26 74LS04
U27 LS273
U25 LS541
U32 LS138
SB A8
SB A9
SB A10
SB A11
SB PERIPH SEL
SB E
VIDEO H.D. P/B R.F.
SYNC H.D. P/B R.F.
REC H.D P/B R.F
SYNC HD SAMPLE PULSE
PREAMP AND CNT. PNL +12V
+15V
PREAMP AND CNT. PNL GND
-15V
CNT PNL -12V
U1 LM317
U12 LM337
U6 LM337
U15
U16 CA3019
U21 74LS04
SH 2&4
SH 4
SH 3&4
N/C
DROPOUT INTERVAL
+5V
GND
FL1
+12V
-12V
-5.2V
PRODUCTION RELEASE
PCN 30002-3
PCN 30005-3
PCN 30031-3
PCN 30079-3
AMPEX
SCHEMATIC
EQUAL / DEMOD NON SYNC
92739
1450246
1450243
1450244
NEXT ASSY
USED ON
APPLICATION
SCALE NONE



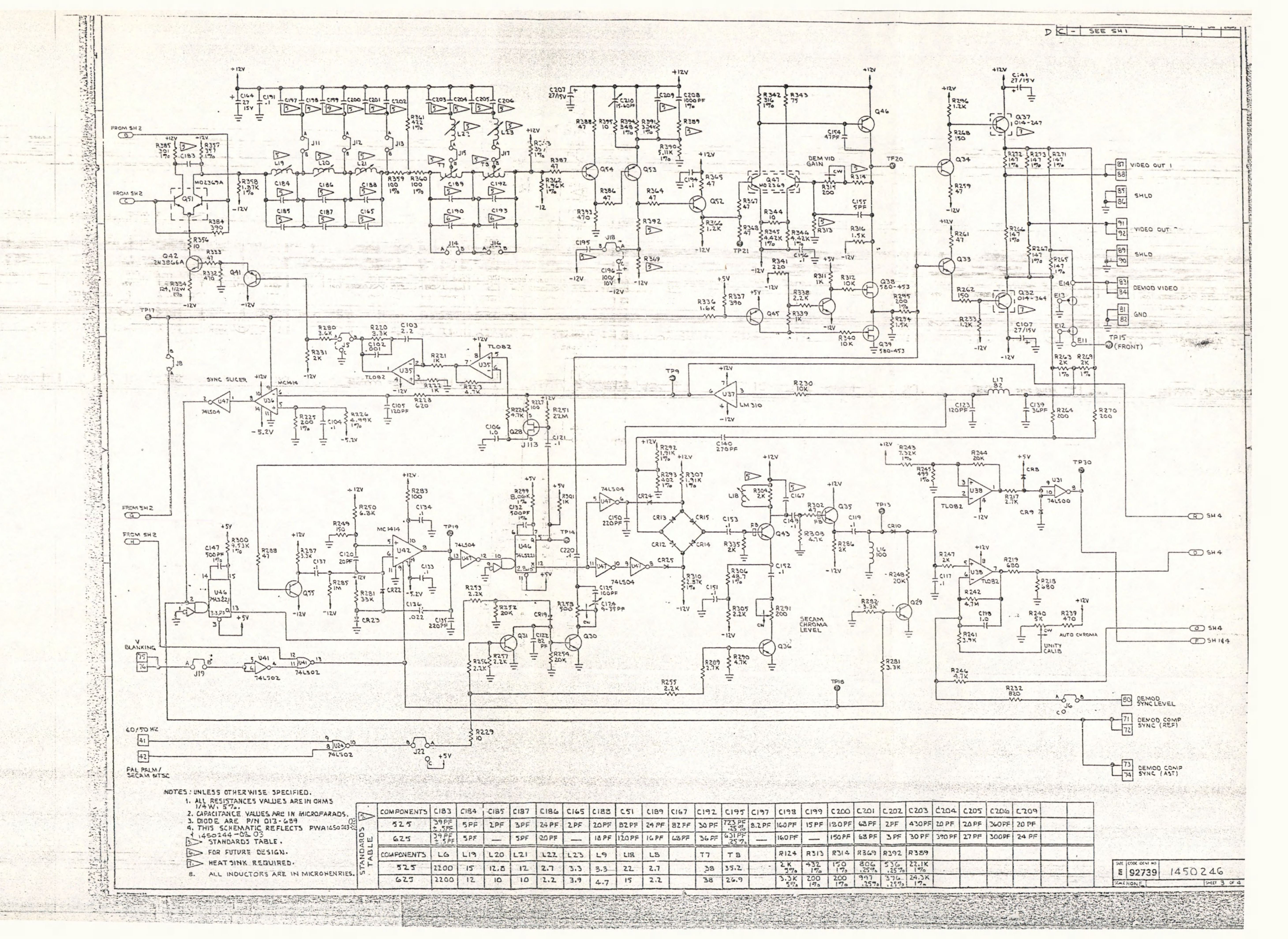
REFERENCE DESIGNATION	
LAST USED	NOT USED
C224	C5,7-12,23-25,30
CR25	39,42,214
DL2	CR2,3
E14	
J22	L1,3
L23	Q1-3,8,9
Q57	R4-20,27-63,55
R404	260,308,309.
TP32	TP3,4,26,12
TPG6	
U51	U2-5,9-11,22
FL2	S1
VR2	T2

I.C. LIST

REF DES	U25	U27	U32	U33,36,42	U34	U39	U43,50	U44	U46,49	U48	U51	
AMPEX P/N	000-026	590-335	589-823	001-996	590-553	589-971	590-543	590-329	589-934	590-561	590-500	
VENDOR P/N	74LS541	74LS273	74LS133	MC1414	TL710CP	CA3141	MC10116	74LS123	74LS221	CA3140	MC10109	
VOLTAGE	+5V (20)	+5V (20)	+5V (16)	+12V(10)-5.2V(7,X)	-5.2V (4)	-12V (9)	-5.2V (8)	+5V (16)	+5V (16)		-5.2V (8)	
GROUND	10	10	8	11	1		1,16	8	8		1,16	
REF DES	U1	U13,19,23,30.	U7,20,29,35,38.	U8,28	U15,16	U6,12	U14,37	U17	U18	U21,26,47	U31,40	U24,41,45
AMPEX P/N	589-527	590-980	590-602	587-163	586-255	590-803	590-448	590-540	587-164	589-814	589-813	590-332
VENDOR P/N	LM317	TL191	TL082	MC1330	CA3019	LM337	LM310	CA3054	MC1350	74LS04	74LS00	74LS02
VOLTAGE	+12V (2)	+12V(11)-12V(14) +5V(13)	+12V(8)-12V(4)	+12V (6)		-12V (3)	+12(7)-12V(4)	-12V (5)	+12V (2)	+5V (14)	+5V (14)	+5V (14)
GROUND		13		8					3,7	7	7	7

SIZE E | CODE IDENT NO 92739 | 1450246

SCALE NONE | SHEET 2 OF



NOTES: UNLESS OTHERWISE SPECIFIED.

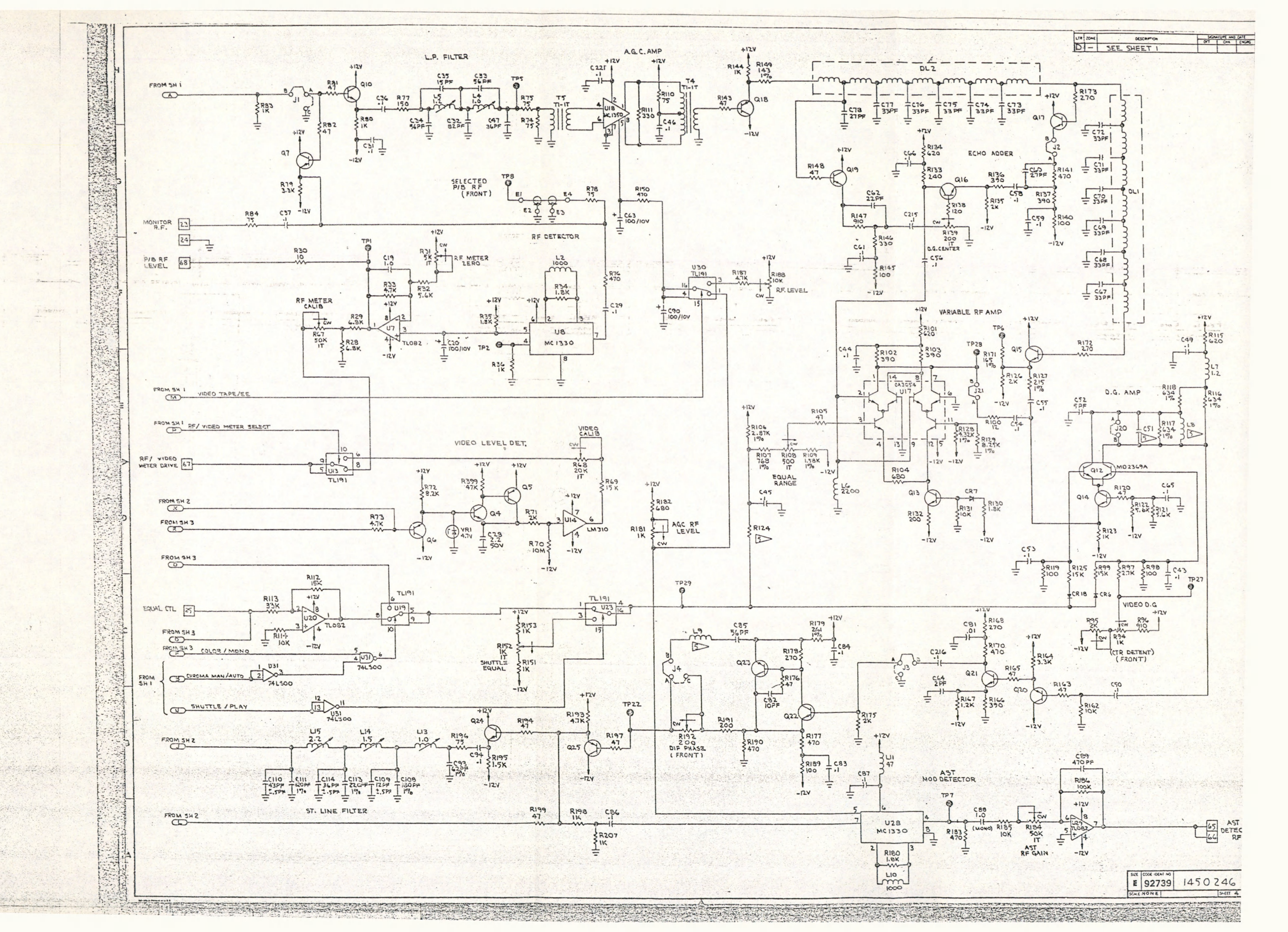
1. ALL RESISTANCES VALUES ARE IN OHMS 1/4W, 5%.
2. CAPACITANCE VALUES ARE IN MICROFARADS.
3. DIODE ARE P/N 013-689
4. THIS SCHEMATIC REFLECTS PWA 1450243-03 & 1450244-03 03
5. STANDARDS TABLE.
6. FOR FUTURE DESIGN.
7. HEAT SINK REQUIRED.
8. ALL INDUCTORS ARE IN MICROHENRIES.

STANDARDS TABLE (5.)

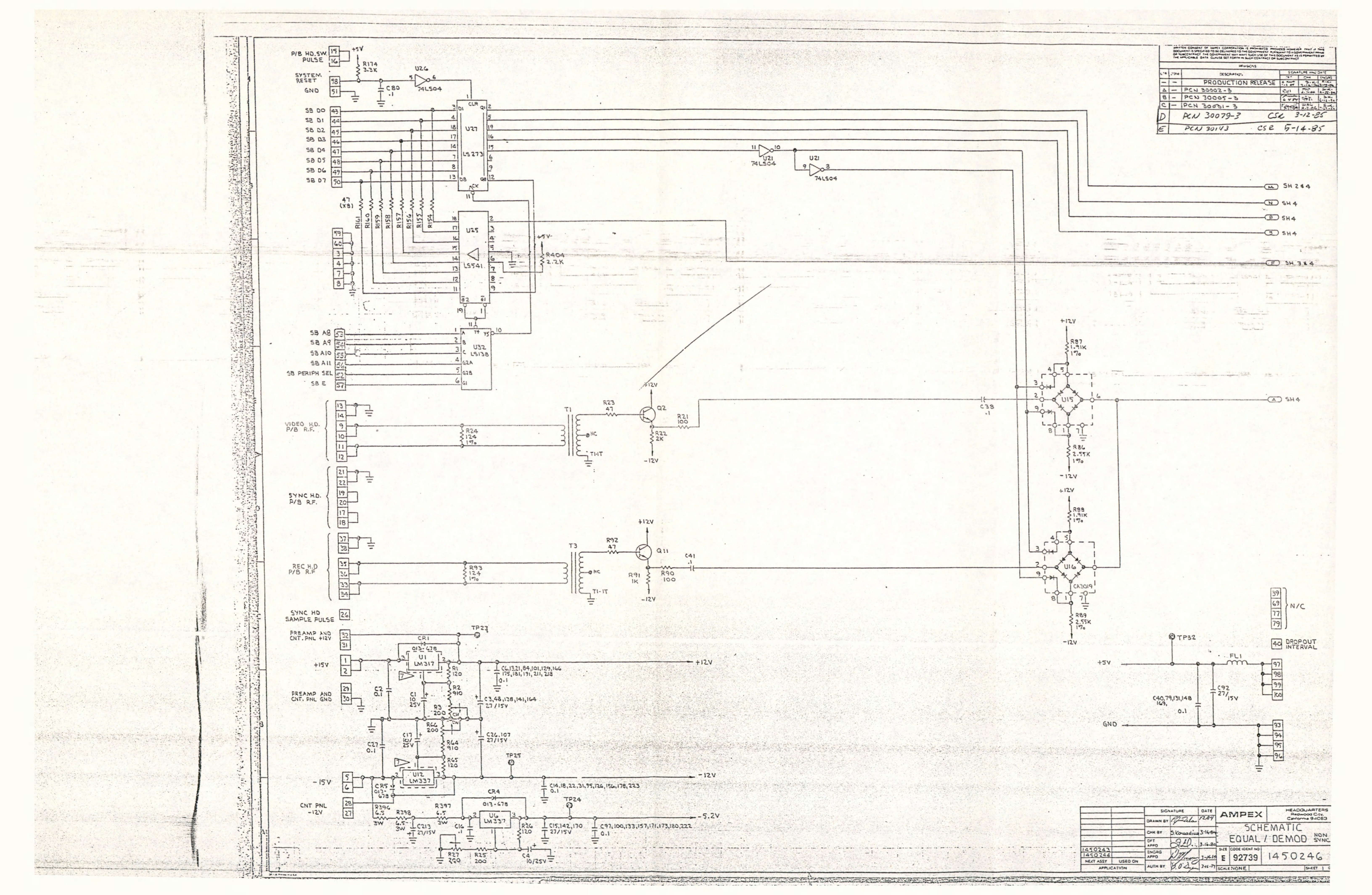
COMPONENTS	C183	C184	C185	C187	C186	C165	C188	C51	C189	C167	C192	C195	C197	C198	C199	C200	C201	C202	C203	C204	C205	C206	C209		
525	39PF ±.5PF	5PF	2PF	3PF	24PF	2PF	20PF	82PF	24PF	82PF	30PF	723PF .25%	8.2PF	160PF	15PF	180PF	68PF	2PF	430PF	20PF	20PF	360PF	20PF		
625	39PF ±.5PF	5PF	—	5PF	20PF	—	18PF	120PF	16PF	68PF	36PF	631PF .25%	—	160PF	—	150PF	68PF	3PF	30PF	390PF	27PF	300PF	24PF		
COMPONENTS	L6	L19	L20	L21	L22	L23	L9	L18	L8		T7	T8		R124	R313	R314	R369	R392	R389						
525	2200	15	12.8	12	2.7	3.3	3.3	22	2.7		38	35.2		2K 5%	432 1%	150 1%	806 .25%	536 .25%	22.1K 1%						
625	2200	12	10	10	2.2	3.9	4.7	15	2.2		38	26.9		3.3K 5%	200 1%	200 1%	997 .25%	376 .25%	24.3K 1%						

SIZE E | CODE IDENT NO 92739 | 1450246

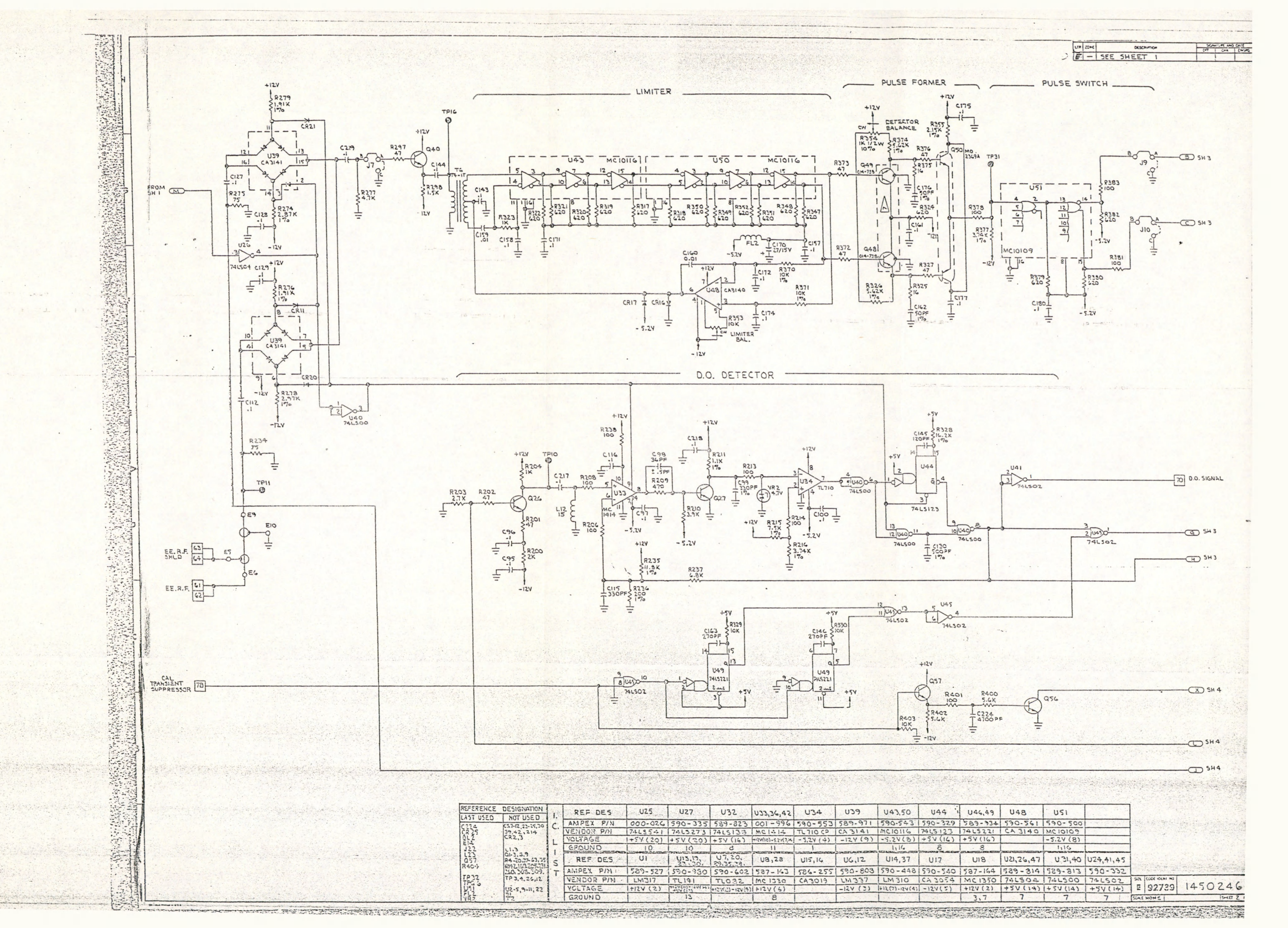
SCALE NONE | SHEET 3 OF 4



SEE SHEET 1
L.P. FILTER
A.G.C. AMP
DL2
ECHO ADDER
DL1
SELECTED P/B RF (FRONT)
RF DETECTOR
FROM SH 1
MONITOR R.F.
P/B RF LEVEL
RF METER ZERO
RF METER CALIB
R.F. LEVEL
VARIABLE RF AMP
D.G. AMP
VIDEO TAPE/EE
RF/ VIDEO METER SELECT
RF/ VIDEO METER DRIVE
VIDEO LEVEL DET.
VIDEO CALIB
FROM SH 2
FROM SH 3
AGC RF LEVEL
EQUAL RANGE
EQUAL CTL
SHUTTLE EQUAL
COLOR / MONO
CHROMA MAN/AUTO
SHUTTLE / PLAY
VIDEO D.G
(CTR DETENT) (FRONT)
DIF PHASE (FRONT)
ST. LINE FILTER
AST MOD DETECTOR
AST RF GAIN
AST DETEC RF
E 92739 1450246
SCALE NONE
SHEET 4



PRODUCTION RELEASE
PCN 30002-3
PCN 30005-3
PCN 30031-3
PCN 30079-3 CSK 3-12-85
PCN 30143 CSE 5-14-85
P/B HD.SW. PULSE
SYSTEM RESET
GND
SB D0
SB D1
SB D2
SB D3
SB D4
SB D5
SB D6
SB D7
R174 3.3K
U26 74LS04
C80 .1
U27 LS273
U25 LS541
R404 2.2K
U21 74LS04
SH 2 & 4
SH 4
SH 3 & 4
SB A8
SB A9
SB A10
SB A11
SB PERIPH SEL
SB E
U32 LS138
VIDEO H.D. P/B R.F.
R24 124 1%
T1
R23 47
Q2
R21 100
R22 2K
C38 .1
U15
R87 1.91K 1%
R86 2.55K 1%
+12V
-12V
SYNC H.D. P/B R.F.
REC H.D P/B R.F
T3
R92 47
Q11
C41 .1
R93 124 1%
R91 1K
R90 100
U16 CA3019
R88 1.91K 1%
R89 2.55K 1%
N/C
DROPOUT INTERVAL
SYNC HD SAMPLE PULSE
TP23
PREAMP AND CNT. PNL +12V
+15V
CR1 013-678
U1 LM317
R1 120
R2 910
R3 200
C1 10 25V
C2 0.1
PREAMP AND CNT. PNL GND
C6,13,21,84,101,129,146 175,181,191,211,218 0.1
C3,48,138,141,164 27/15V
C26,107 27/15V
R66 200
R64 910
R65 120
C17 10/25V
C27 0.1
TP25
U12 LM337
-15V
CR5 013-678
C14,18,22,31,95,124,156,178,223 0.1
CR4 013-678
U6 LM337
TP24
CNT PNL -12V
R396 6.5 3W
R398 6.5 3W
R397 6.5 3W
C213 27/15V
C16 .1
R26 120
R27 220
R25 200
C4 10/25V
C15,142,170 27/15V
C97,100,133,157,171,173,180,222 0.1
-5.2V
TP32
+5V
FL1
C92 27/15V
C40,79,131,148 169, 0.1
GND
1450243
1450244
NEXT ASSY
USED ON
APPLICATION
DRAWN BY
CHK BY
DFT APPD
ENGRG APPD
AUTH BY
AMPEX
HEADQUARTERS Redwood City, California 94063
SCHEMATIC
EQUAL / DEMOD NON SYNC
E 92739 1450246
SCALE NONE
SHEET 1

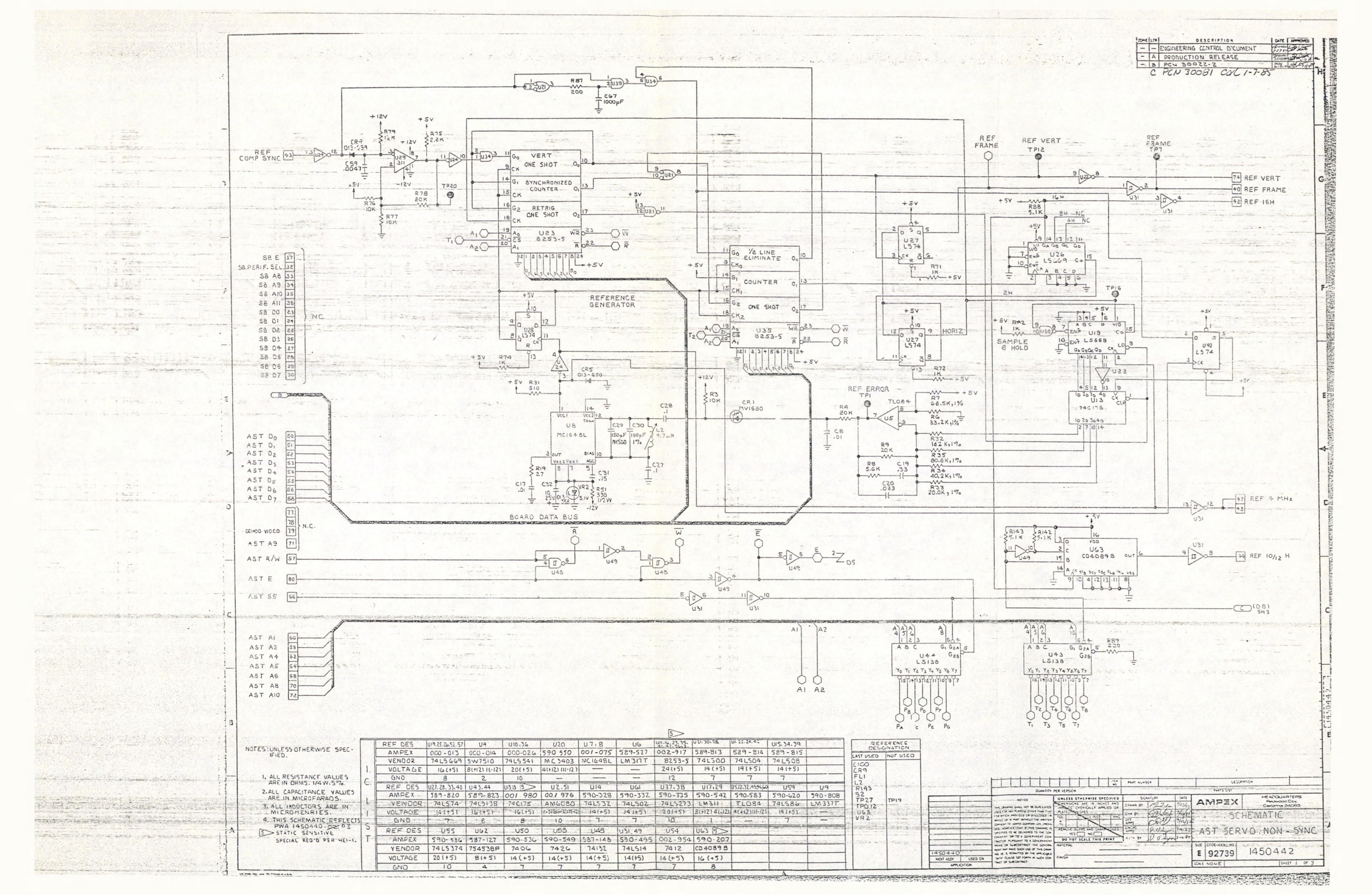


REFERENCE DESIGNATION	
LAST USED	NOT USED
C224	C87-12,23-25,30
CR25	39,42,214
DL2	CR2,3
E14	
J22	L1,3
L23	Q1-3,3,9
Q57	R4-20,37-63,35
R404	R112,152,205,231.
	250,306,309.
TP32	TP3,4,26,12
TPG6	
U51	U2-5,9-11,22
FL2	S1
VR2	T2

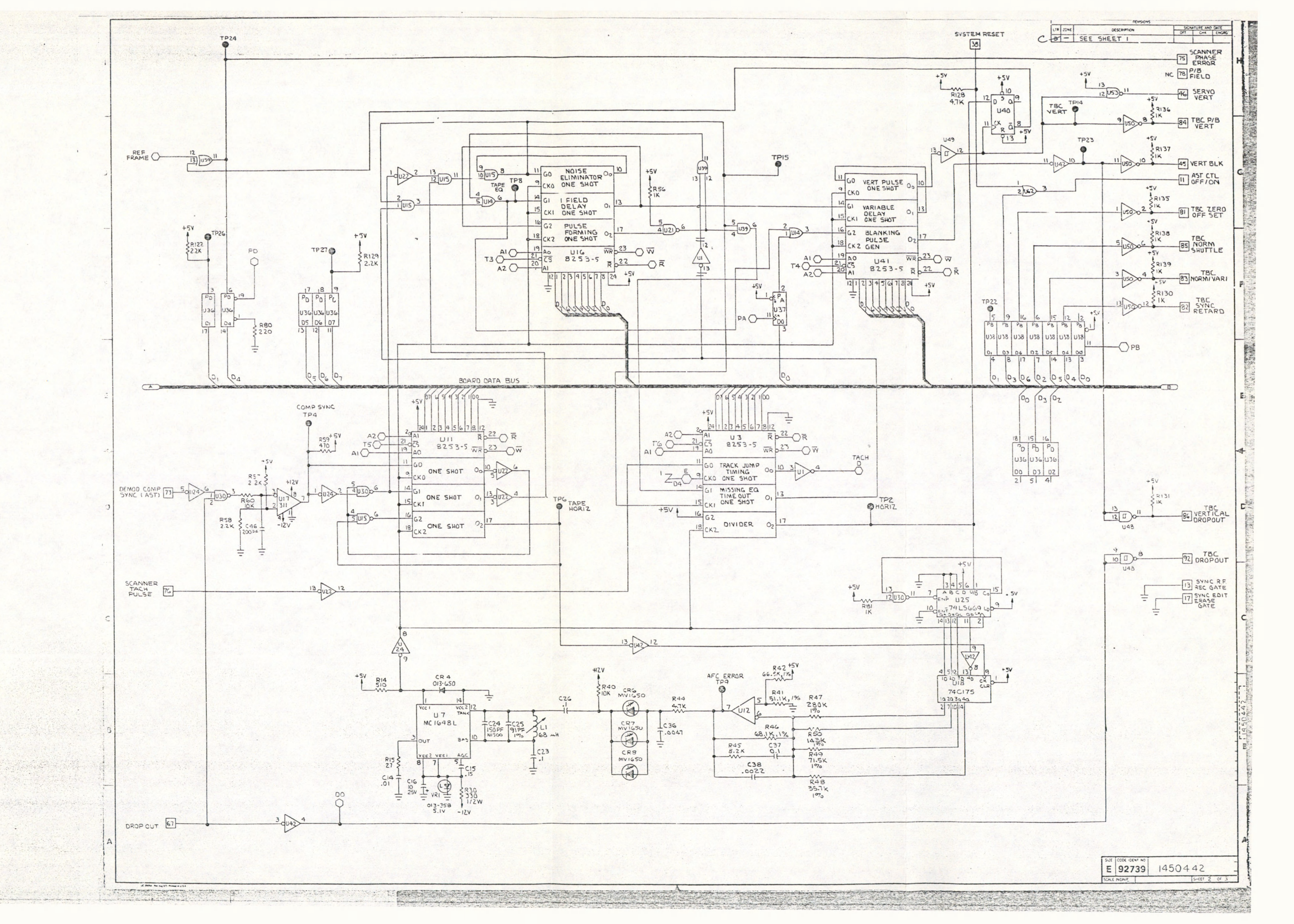
I.C. LIST

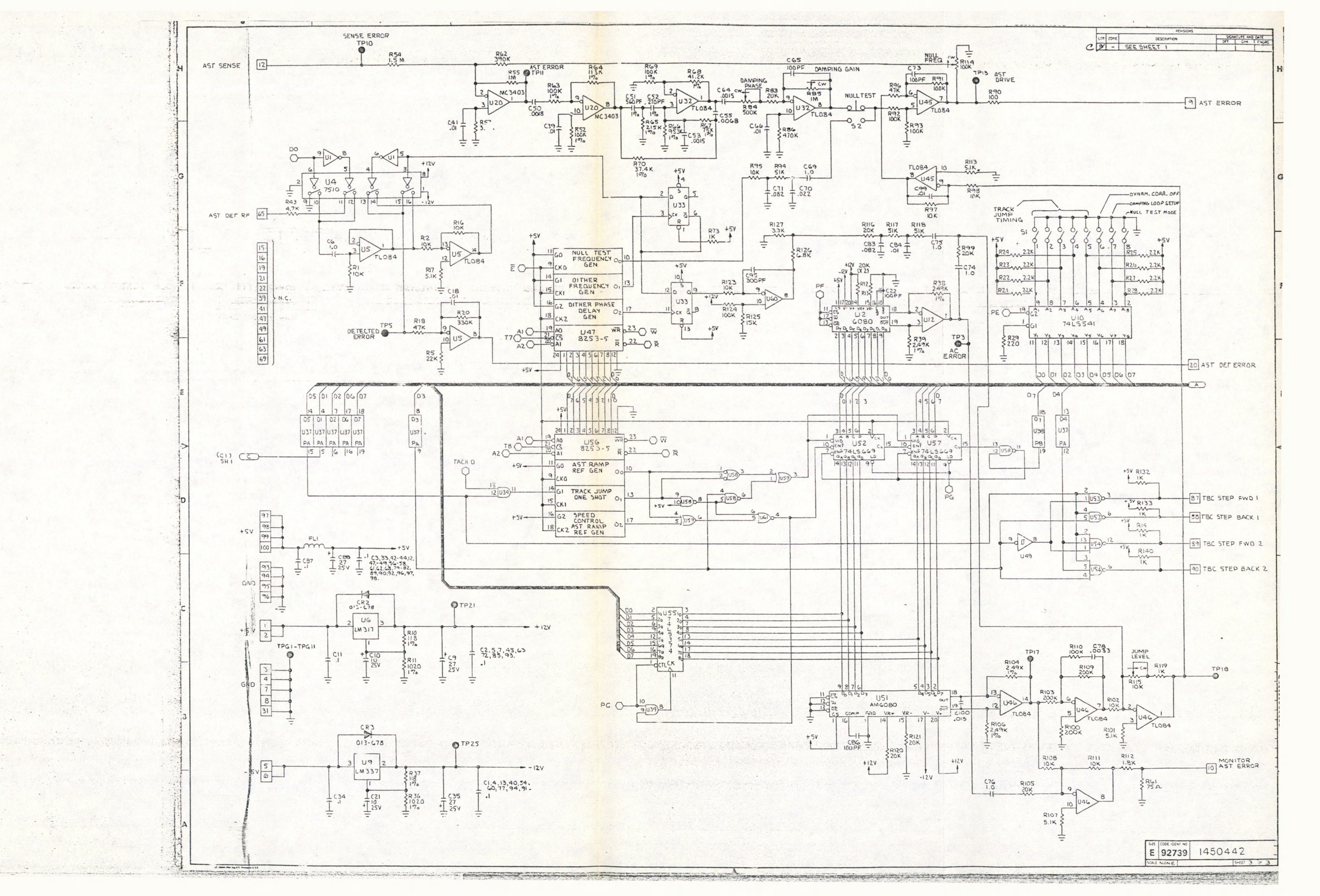
REF DES	U25	U27	U32	U33,36,42	U34	U39	U43,50	U44	U46,49	U48	U51	
AMPEX P/N	000-026	590-335	589-823	001-996	590-553	589-971	590-543	590-329	589-934	590-561	590-500	
VENDOR P/N	74LS541	74LS273	74LS138	MC1414	TL710CP	CA3141	MC10116	74LS123	74LS221	CA3140	MC10109	
VOLTAGE	+5V (20)	+5V (20)	+5V (16)	+12V(10)-5.2V(7,8)	-5.2V (4)	-12V (9)	-5.2V (8)	+5V (16)	+5V (16)		-5.2V (8)	
GROUND	10	10	8	11	1		1,16	8	8		1,16	
REF DES	U1	U13,19,23,30.	U7,20,29,35,38.	U8,28	U15,16	U6,12	U14,37	U17	U18	U21,26,47	U31,40	U24,41,45
AMPEX P/N	589-527	590-330	590-602	587-163	586-255	590-803	590-448	590-540	587-164	589-314	589-313	590-332
VENDOR P/N	LM317	TL191	TL082	MC1330	CA3019	LM337	LM310	CA3054	MC1350	74LS04	74LS00	74LS02
VOLTAGE	+12V (2)	[illegible]	+12V(8)-12V(4)	+12V (6)		-12V (3)	+12(7)-12V(4)	-12V (5)	+12V (2)	+5V (14)	+5V (14)	+5V (14)
GROUND		13		8					3,7	7	7	7

SIZE E | CODE IDENT NO 92739 | 1450246
SCALE NONE | SHEET 2



I.C. LIST	REF DES	U19,25,26,52,57	U4	U10,36	U20	U7,8	U6	U11,16,23,35,41,47,56,3	U21,30,58	U1,22,24,42	U15,34,39	
	AMPEX	000-013	000-014	000-026	590 550	001-075	589-527	002-917	589-813	529-814	589-815	
	VENDOR	74LS669	SW7510	74LS541	MC3403	MC1648L	LM317T	8253-5	74LS00	74LS04	74LS08	
	VOLTAGE	16(+5)	8(+12) 1(-12)	20(+5)	4(+12) 11(-12)	—	—	24(+5)	14(+5)	19(+5)	14(+5)	
	GND	8	2	10	—	—	—	12	7	7	7	
	REF DES	U27,28,33,40	U43,44	U13,18 5	U2,51	U14	U61	U37,38	U17,29	U5,12,32,45,46,60	U59	U9
	AMPEX	589-820	589-823	001 980	001 976	590-328	590-332	590-335	590-542	590-583	590-620	590-808
	VENDOR	74LS74	74LS138	74C175	AM6080	74LS32	74LS02	74LS273	LM311	TL084	74LS86	LM337T
	VOLTAGE	14(+5)	16(+5)	16(+5)	[illegible]	14(+5)	14(+5)	20(+5)	8(+12) 4(-12)	4(+12) 11(-12)	14(+5)	—
	GND	7	8	8	10	7	7	10	1	—	7	—
	REF DES	U55	U62	U50	U53	U48	U31,49	U54	U63 5			
	AMPEX	590-536	587-127	590-536	590-549	587-148	590-495	002-954	590-207			
	VENDOR	74LS374	754538P	7406	7426	74132	74LS14	7412	CD4089B			
	VOLTAGE	20(+5)	8(+5)	14(+5)	14(+5)	14(+5)	14(+5)	14(+5)	16(+5)			
	GND	10	4	7	7	7	7	7	8			


SEE SHEET 1
SYSTEM RESET
SCANNER PHASE ERROR
P/B FIELD
SERVO VERT
TBC P/B VERT
VERT BLK
AST CTL OFF/ON
TBC ZERO OFF SET
TBC NORM SHUTTLE
TBC NORM/VARI
TBC SYNC RETARD
REF FRAME
NOISE ELIMINATOR ONE SHOT
I FIELD DELAY ONE SHOT
PULSE FORMING ONE SHOT
U16 8253-5
VERT PULSE ONE SHOT
VARIABLE DELAY ONE SHOT
BLANKING PULSE GEN
U41 8253-5
BOARD DATA BUS
COMP SYNC TP4
U11 8253-5
ONE SHOT
DEMOD COMP SYNC (AST)
TAPE HORIZ
U3 8253-5
TRACK JUMP TIMING ONE SHOT
MISSING EQ TIME OUT ONE SHOT
DIVIDER
TACH D
HORIZ
TBC VERTICAL DROPOUT
TBC DROPOUT
SYNC R.F. REC GATE
SYNC EDIT ERASE GATE
SCANNER TACH PULSE
U25 74LS669
U18 74C175
U7 MC1648L
AFC ERROR TP9
DROP OUT
E 92739 1450442



SENSE ERROR TP10
AST SENSE
AST ERROR TP11
NULL FREQ
DAMPING GAIN
DAMPING PHASE
NULLTEST
AST DRIVE
AST ERROR
AST DEF RF
N.C.
TRACK JUMP TIMING
DYNAM. CORR. OFF
DAMPING LOOP SETUP
NULL TEST MODE
NULL TEST FREQUENCY GEN
DITHER FREQUENCY GEN
DITHER PHASE DELAY GEN
U47 8253-5
DETECTED ERROR TP5
AC ERROR
AST DEF ERROR
U56 8253-5
AST RAMP REF GEN
TRACK JUMP ONE SHOT
SPEED CONTROL AST RAMP REF GEN
TACH D
TBC STEP FWD 1
TBC STEP BACK 1
TBC STEP FWD 2
TBC STEP BACK 2
U6 LM317
U9 LM337
U51 AM6080
JUMP LEVEL
MONITOR AST ERROR
SEE SHEET 1
E 92739 1450442
SCALE NONE
SHEET 3 OF 3

NOTES: UNLESS OTHERWISE SPECIFIED.

1. RESISTANCE VALUES ARE IN OHMS, 1/4W, 5%.
2. CAPACITANCE VALUES ARE IN MICROFARADS.
3. GROUND SYMBOLS: ANALOG GND; DIGITAL GND
4. AUDIO 4 COMPONENTS ARE NOT USED ON PWA 1450482
5. SCHEMATIC REFLECTS: PWA 1450452-04 (4-CHANNEL) PWA 1450482-03 (3-CHANNEL)
6. TRANSISTORS ARE VN10KM.
7. INDUCTORS ARE IN MICROHENRIES, 5%.
8. DIODES ARE GENERAL PURPOSE, SILICON, SWITCHING DIODES P/N 013-689.
9. TABLE (SH3) SHOWS VALUE DIFFERENCES BETWEEN 3-CHANNEL AND 4-CHANNEL PREAMPS.

I.C. LIST

REF DES	AMPEX P/N	VENDOR P/N	PIN +15V	PIN +12V	PIN -15V	PIN -12V	DIG GND
U1	590-035	NE5532	8		4		
U3,5,7,9,13,15,17,18	590-035	NE5532		8		4	
U2,4,10,14,19	590-617	LM318	7		4		
U6,16	590-454	LF13333	12		5		4
U8	590-589	NE5534		7		4	
U11	589-527	LM317T	3				
U12	590-808	LM337T				2	

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REVISIONS

LTR	ZONE	DESCRIPTION	DFT	CHK	ENGRG
–	–	ECD	1/17/84		
A	–	PRODUCTION RELEASE	5/17/84	[illegible]	[illegible]
B		PCN 30120-8 CSR			
C		PCN 30132-2 CSR 5-2-85			

P5 16 CT PREAMP
8 C.T. REC I
P4 23 C.T. BIAS
P6 13 CT RELAY CTL
P5 15 CT CONFIDENCE
P4 24 DIG GND
5 KEY
14 +12V OUT
26 +15V
25, 11, 12 ANALOG GND
13 -15V
1 -12V OUT

REFERENCE DESIGNATION	
LAST USED	NOT USED
C132 CR7 E52 K5 L13 Q25 R191 TP5 TPG(A)&(D) U19	C14

NEXT ASSY	USED ON
1450482	VPR-6
1450452	VPR-6

APPLICATION

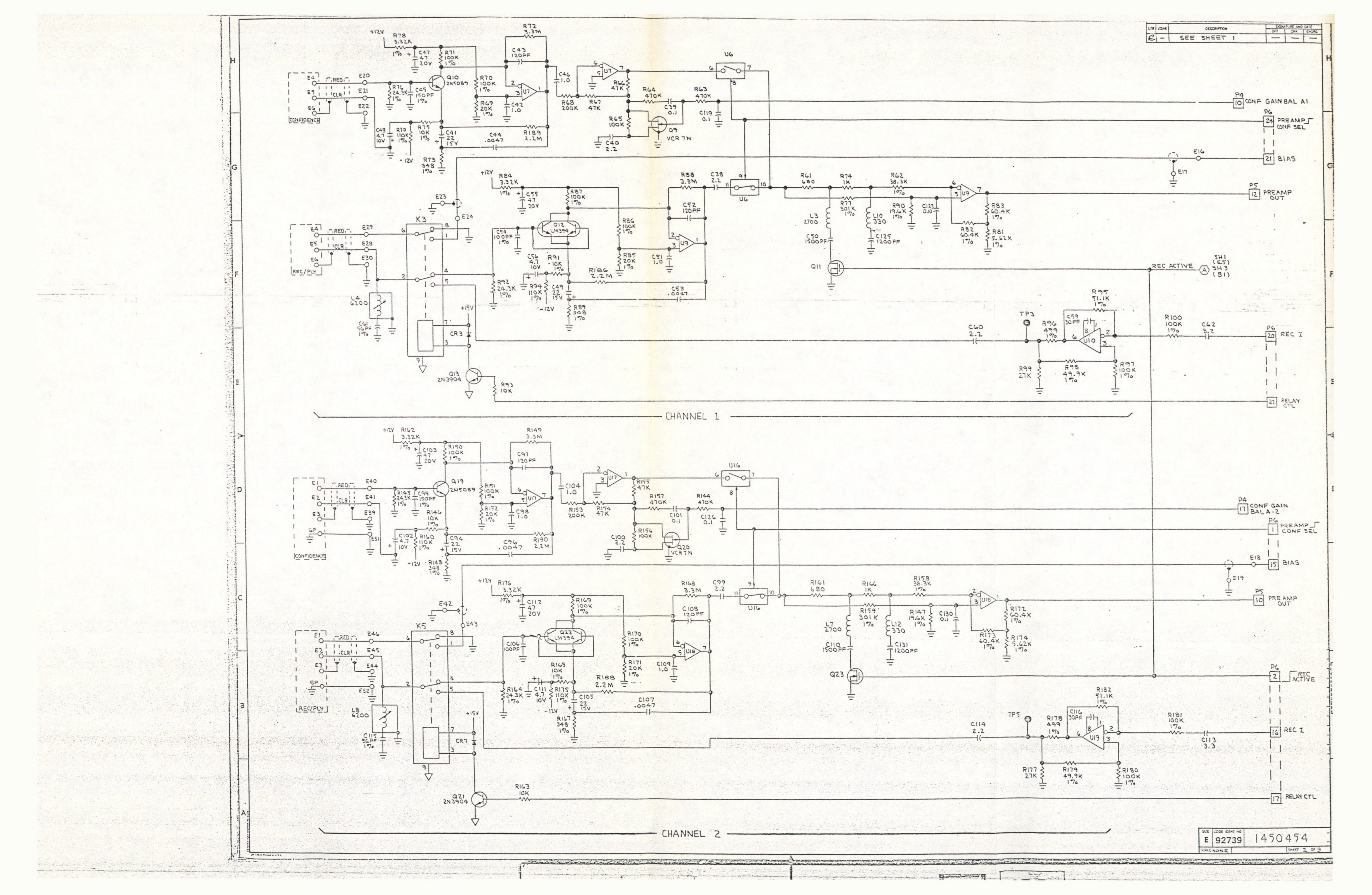
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DRAWN BY	[signature]	4/23/84
CHK BY	[signature]	[illegible]
DFT APPD	[signature]	[illegible]
ENGRG APPD	S. [signature]	[illegible]
AUTH BY	[signature]	10-18-84

AMPEX — HEADQUARTERS Redwood City, California 94063

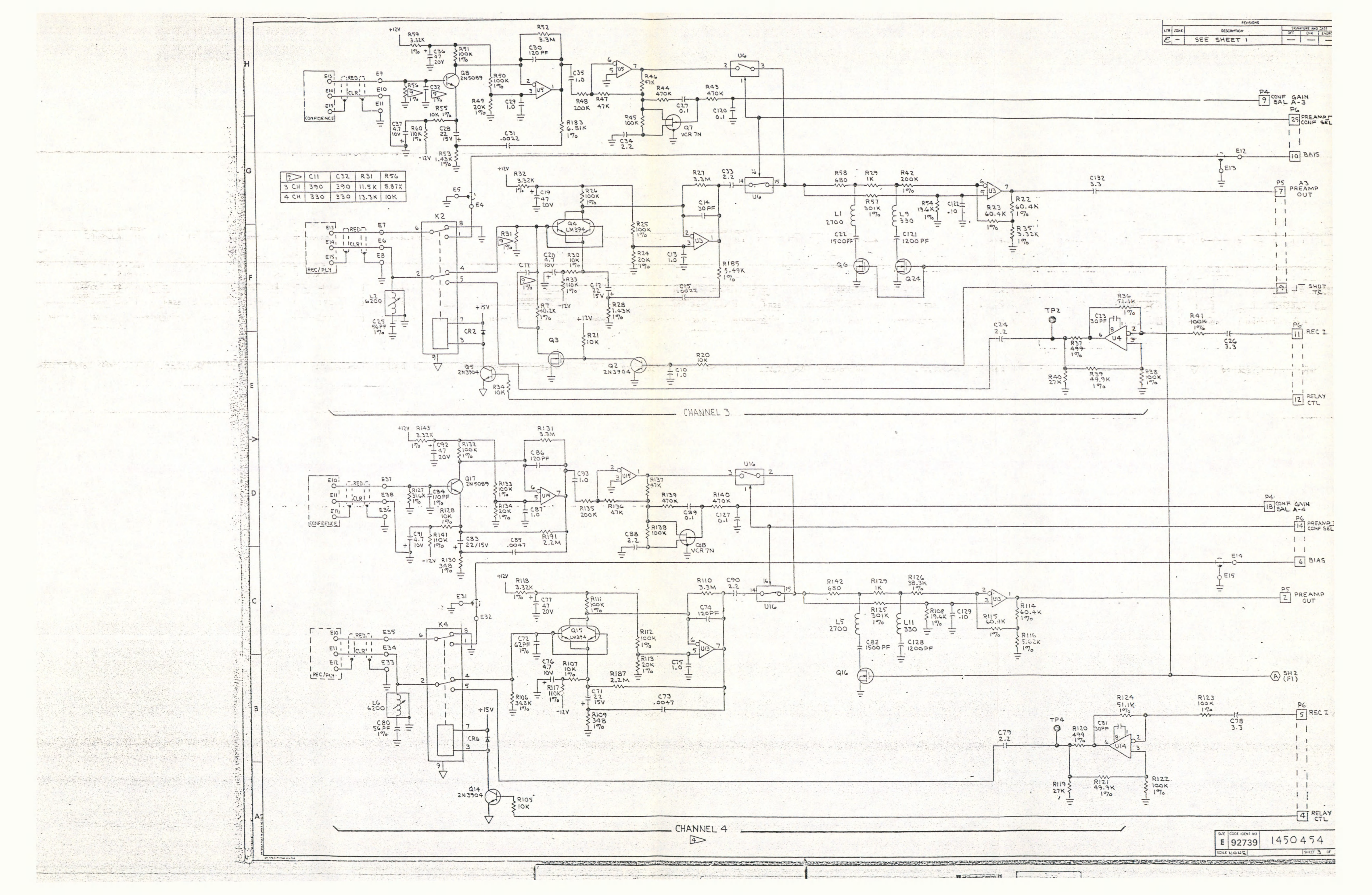
SCHEMATIC AUDIO PREAMP

SIZE E — CODE IDENT NO 92739 — 1450454

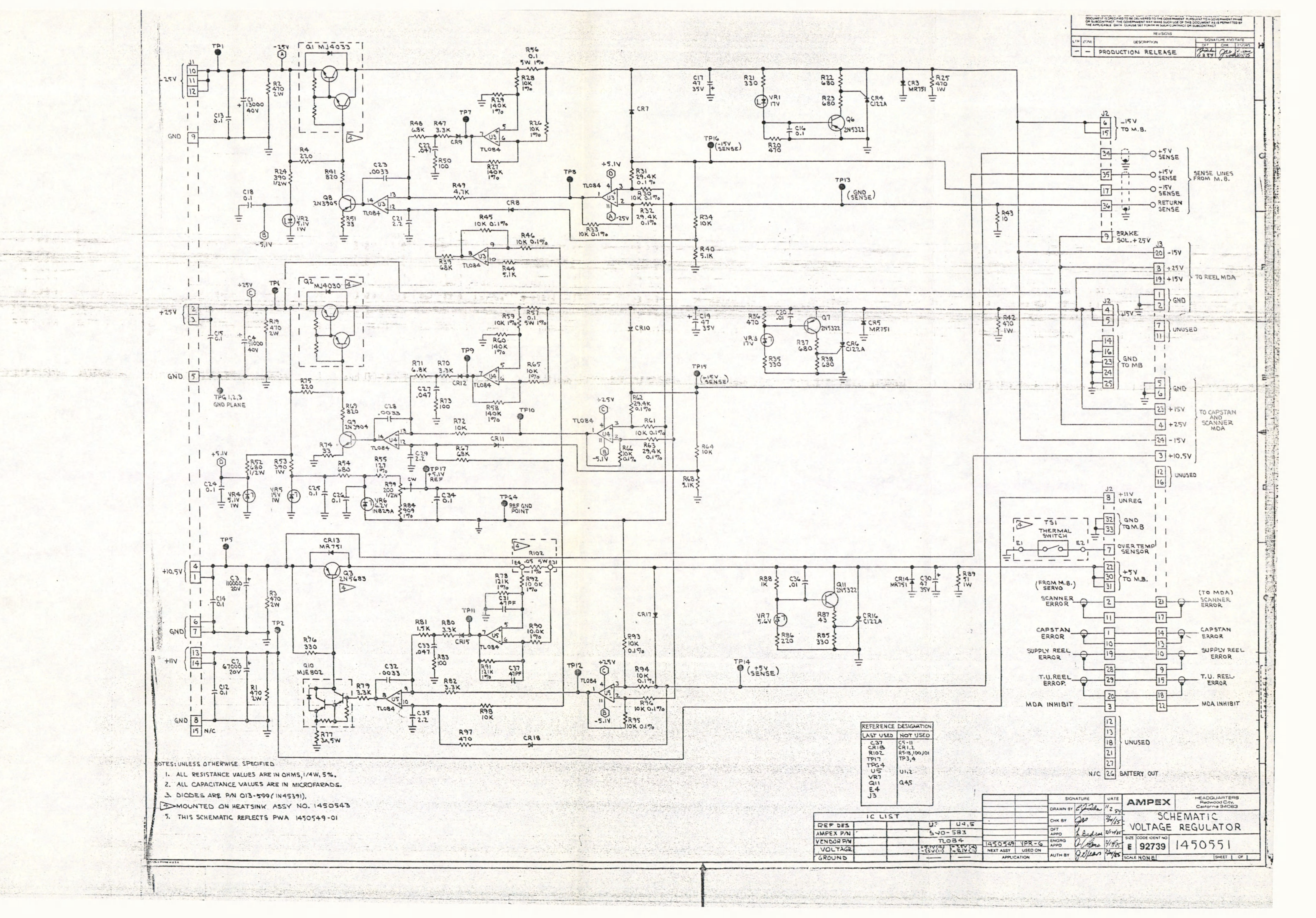
SCALE NONE — SHEET 1 OF 3



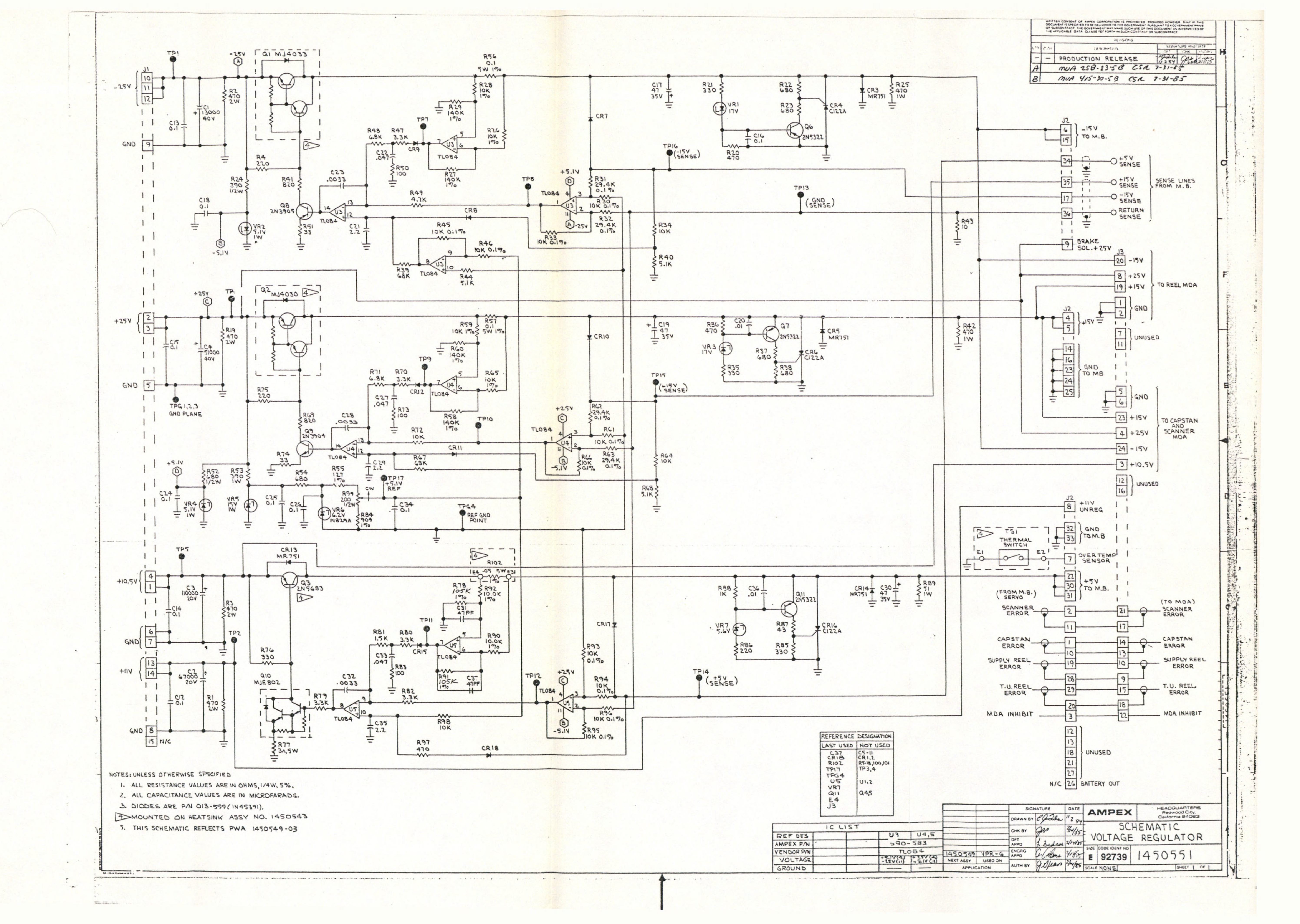
SEE SHEET 1
CONF GAIN BAL A1
PREAMP CONF SEL
BIAS
PREAMP OUT
REC ACTIVE
SH1 (E5) SH3 (B1)
REC I
RELAY CTL
CHANNEL 1
CONF GAIN BAL A-2
PREAMP CONF SEL
BIAS
PREAMP OUT
REC ACTIVE
REC I
RELAY CTL
CHANNEL 2
CONFIDENCE
REC/PLY
E 92739 1450454
SHEET 2 OF 3



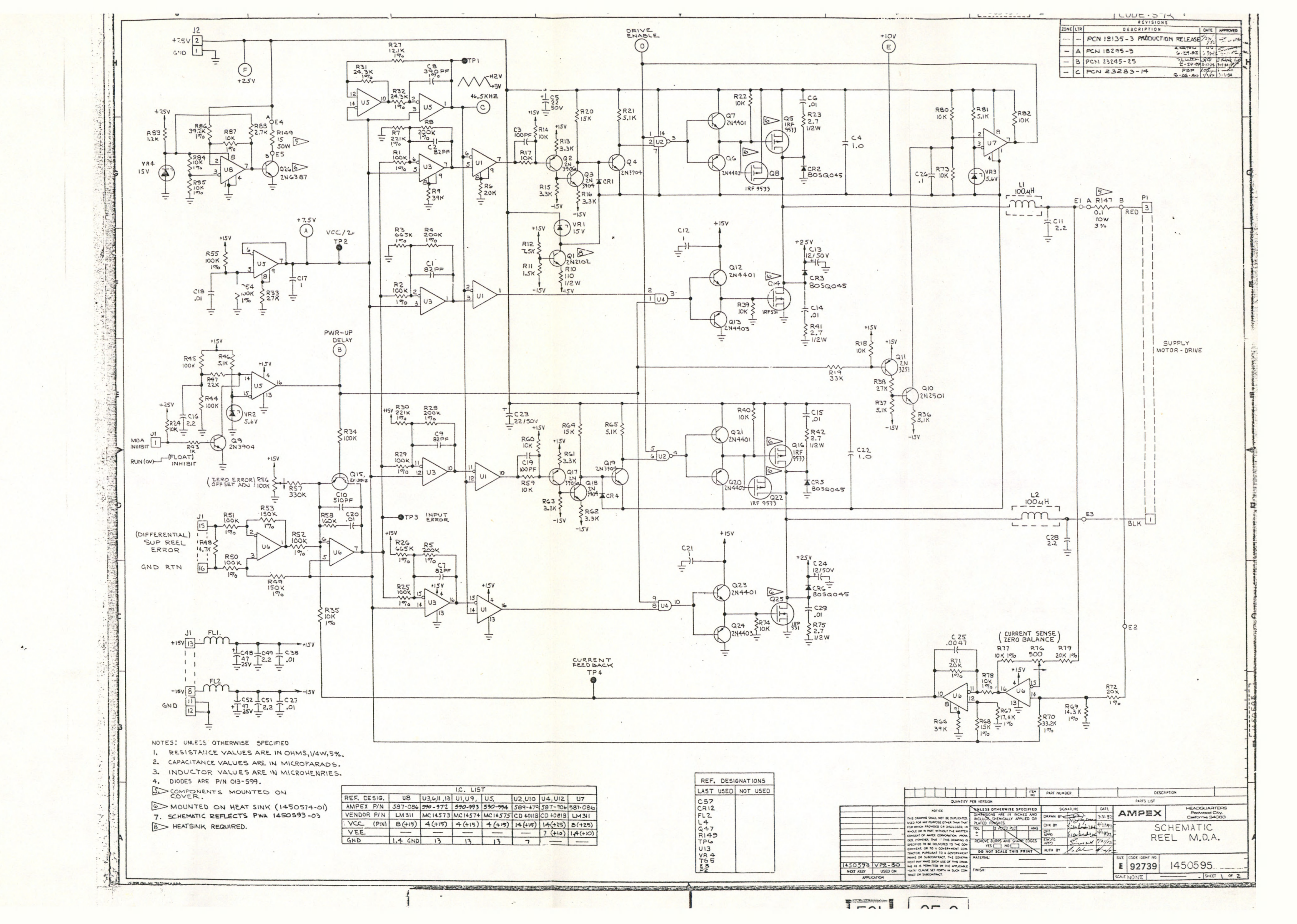
REVISIONS
LTR ZONE DESCRIPTION SIGNATURE AND DATE
E - SEE SHEET 1
CONFIDENCE
REC/PLY
CH 3: C11 390, C32 390, R31 11.5K, R56 8.87K
4 CH: C11 330, C32 330, R31 13.3K, R56 10K
CONF GAIN BAL A-3
PREAMP CONF SEL
BIAS
A3 PREAMP OUT
SHUT TC.
REC I
RELAY CTL
CHANNEL 3
CONF GAIN BAL A-4
PREAMP CONF SEL
BIAS
PREAMP OUT
SH 2 (F1)
REC I
RELAY CTL
CHANNEL 4
SIZE E CODE IDENT NO 92739 1450454
SCALE NONE SHEET 3



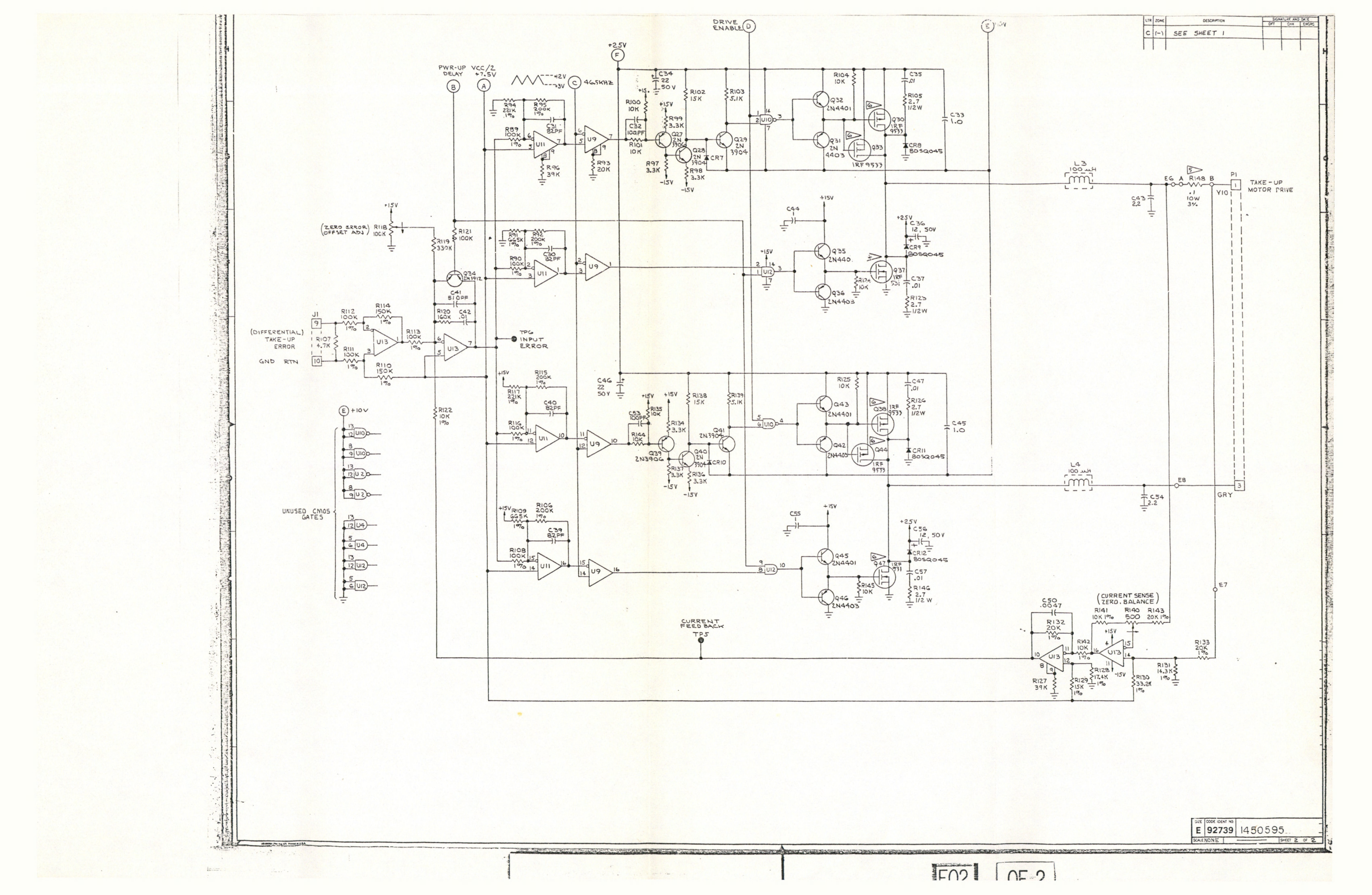
REVISIONS
PRODUCTION RELEASE
Q1 MJ4033
Q2 MJ4030
Q3 2N5683
Q6 2N5322
Q7 2N5322
Q8 2N3905
Q9 2N3904
Q10 MJE802
Q11 2N5322
TL084
SENSE LINES FROM M.B.
+5V SENSE
+15V SENSE
-15V SENSE
RETURN SENSE
BRAKE SOL. +25V
TO REEL MDA
TO CAPSTAN AND SCANNER MDA
GND TO MB
UNUSED
TS1 THERMAL SWITCH
OVER TEMP SENSOR
+11V UNREG
+5V TO M.B.
-15V TO M.B.
(FROM M.B.) SERVO
(TO MDA)
SCANNER ERROR
CAPSTAN ERROR
SUPPLY REEL ERROR
T.U. REEL ERROR
MDA INHIBIT
BATTERY OUT
TPG 1,2,3 GND PLANE
REF GND POINT
NOTES: UNLESS OTHERWISE SPECIFIED
1. ALL RESISTANCE VALUES ARE IN OHMS, 1/4W, 5%.
2. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
3. DIODES ARE P/N 013-599 (1N4539 1).
4 MOUNTED ON HEATSINK ASSY NO. 1450543
5. THIS SCHEMATIC REFLECTS PWA 1450549-01
REFERENCE DESIGNATION
LAST USED: C37, CR18, R102, TP17, TPG4, U5, VR7, Q11, E4, J3
NOT USED: C5-11, CR1,2, R5-18,100,101, TP3,4, U1,2, Q4,5
IC LIST
REF DES: U3, U4,5
AMPEX P/N: 540-583
VENDOR P/N: TL084
VOLTAGE: +5.1V(4) -15V(11); +25V(4) -5.1V(11)
GROUND
NEXT ASSY 1450549 USED ON VPR-6
APPLICATION
DRAWN BY 11/2/84
CHK BY 2/14/85
DFT APPD 2/14/85
ENGRG APPD 2/14/85
AUTH BY 2/14/85
AMPEX
HEADQUARTERS Redwood City, California 94063
SCHEMATIC VOLTAGE REGULATOR
SIZE E
CODE IDENT NO 92739
1450551
SCALE NONE
SHEET 1 OF 1



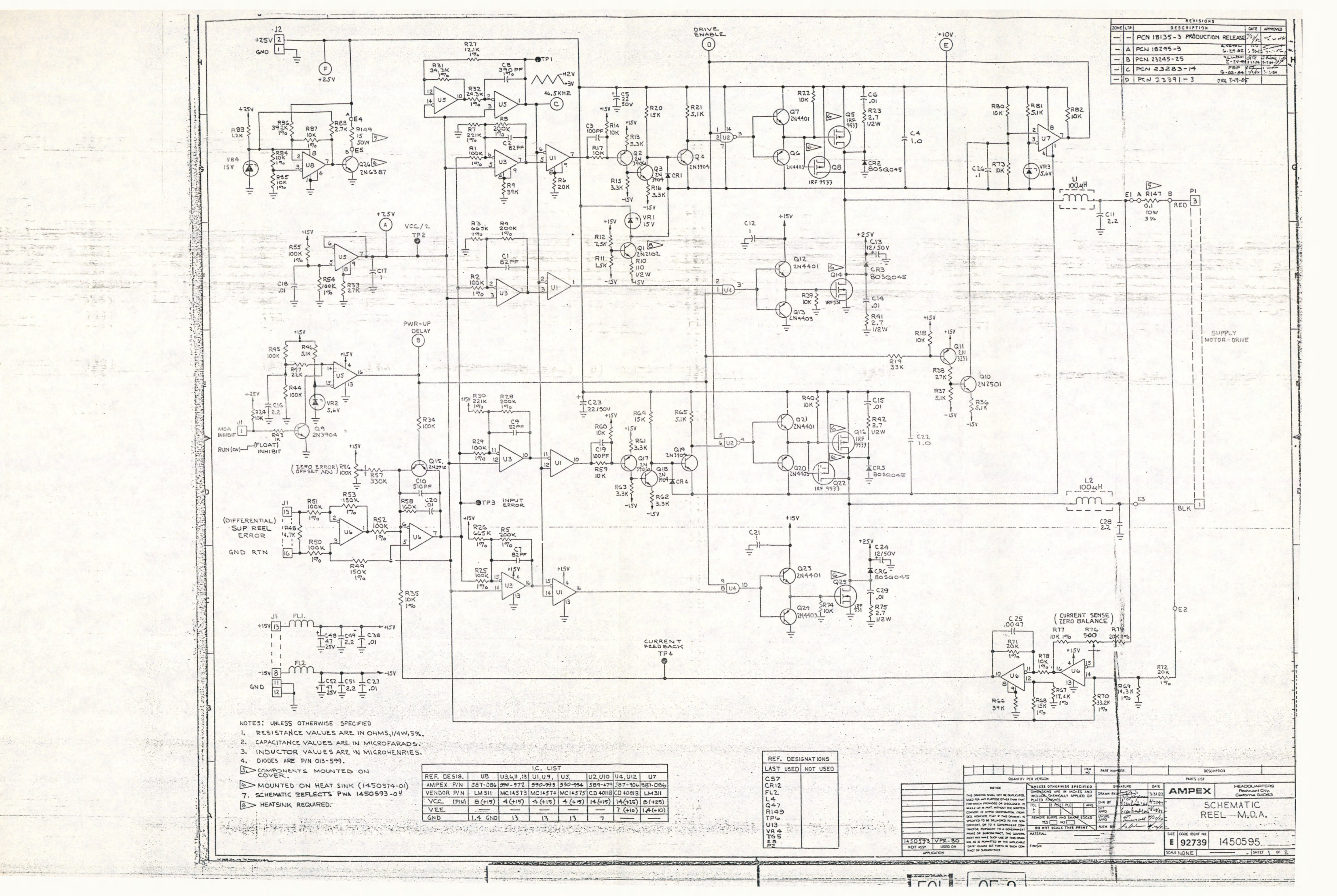
REVISIONS
PRODUCTION RELEASE
A MVA 258-23-5B CSR 7-31-85
B MVA 415-30-5B CSR 7-31-85
-25V
+25V
+10.5V
+11V
GND
Q1 MJ4033
Q2 MJ4030
Q3 2N5683
Q10 MJE802
TL084
-15V TO M.B.
+5V SENSE
+15V SENSE
-15V SENSE
RETURN SENSE
SENSE LINES FROM M.B.
BRAKE SOL. +25V
TO REEL MDA
TO CAPSTAN AND SCANNER MDA
UNUSED
+11V UNREG
GND TO M.B
TS1 THERMAL SWITCH
OVER TEMP SENSOR
+5V TO M.B.
SCANNER ERROR
CAPSTAN ERROR
SUPPLY REEL ERROR
T.U. REEL ERROR
MDA INHIBIT
BATTERY OUT
TPG 1,2,3 GND PLANE
REF GND POINT
NOTES: UNLESS OTHERWISE SPECIFIED
1. ALL RESISTANCE VALUES ARE IN OHMS, 1/4W, 5%.
2. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
3. DIODES ARE P/N 013-599 (1N4539I).
4. MOUNTED ON HEATSINK ASSY NO. 1450543
5. THIS SCHEMATIC REFLECTS PWA 1450549-03
REFERENCE DESIGNATION
LAST USED: C37, CR18, R102, TP17, TPG4, U5, VR7, Q11, E4, J3
NOT USED: C5-11, CR1,2, R5-18,100,101, TP3,4, U1,2, Q4,5
IC LIST
REF DES U3 U4,5
AMPEX P/N 590-583
VENDOR P/N TL084
1450549 VPR-6
NEXT ASSY USED ON
APPLICATION
AMPEX
HEADQUARTERS Redwood City, California 94063
SCHEMATIC VOLTAGE REGULATOR
E 92739 1450551
SCALE NONE



REVISIONS
— PCN 18135-3 PRODUCTION RELEASE
A PCN 18295-3
B PCN 23245-25
C PCN 23283-14
DRIVE ENABLE
+10V
PWR-UP DELAY
VCC/2 TP2
TP1
TP3 INPUT ERROR
CURRENT FEEDBACK TP4
46.5KHZ
MDA INHIBIT
RUN (0V) — (FLOAT) INHIBIT
(ZERO ERROR) OFFSET ADJ
(DIFFERENTIAL) SUP REEL ERROR
GND RTN
(CURRENT SENSE) ZERO BALANCE
SUPPLY MOTOR-DRIVE
RED
BLK
NOTES: UNLESS OTHERWISE SPECIFIED
1. RESISTANCE VALUES ARE IN OHMS, 1/4W, 5%.
2. CAPACITANCE VALUES ARE IN MICROFARADS.
3. INDUCTOR VALUES ARE IN MICROHENRIES.
4. DIODES ARE P/N 013-599.
5 COMPONENTS MOUNTED ON COVER.
6 MOUNTED ON HEAT SINK (1450574-01)
7. SCHEMATIC REFLECTS PWA 1450593-03
8 HEATSINK REQUIRED.
I.C. LIST
REF. DESIG. | U8 | U3,6,11,13 | U1,U9, | U5, | U2,U10 | U4,U12 | U7
AMPEX P/N | 587-086 | 590-972 | 590-993 | 590-994 | 589-479 | 587-906 | 587-086
VENDOR P/N | LM311 | MC14573 | MC14574 | MC14575 | CD 4011B | CD 4081B | LM311
VCC (PIN) | 8 (+15) | 4 (+15) | 4 (+15) | 4 (+15) | 14 (+15) | 14 (+25) | 8 (+25)
VEE | — | — | — | — | — | 7 (+10) | 1,4 (+10)
GND | 1.4 GND | 13 | 13 | 13 | 7 | — | —
REF. DESIGNATIONS
LAST USED: C57 CR12 FL2 L4 Q47 R149 TP6 U13 VR4 TG5 E8 P2
NOT USED
1450593 VPR-80
NEXT ASSY USED ON
APPLICATION
AMPEX HEADQUARTERS Redwood City, California 94063
SCHEMATIC REEL M.D.A.
SIZE E CODE IDENT NO 92739 1450595
SCALE NONE SHEET 1 OF 2
DO NOT SCALE THIS PRINT



C (-) SEE SHEET 1
DRIVE ENABLE
+2.5V
PWR-UP DELAY
VCC/2 +7.5V
46.5KHZ
(ZERO ERROR) OFFSET ADJ
(DIFFERENTIAL) TAKE-UP ERROR
GND RTN
TP6 INPUT ERROR
UNUSED CMOS GATES
TAKE-UP MOTOR DRIVE
CURRENT FEED BACK
TP5
(CURRENT SENSE ZERO. BALANCE)
E 92739 1450595
SCALE NONE
SHEET 2 OF 2



NOTES: UNLESS OTHERWISE SPECIFIED

1. RESISTANCE VALUES ARE IN OHMS, 1/4W, 5%.
2. CAPACITANCE VALUES ARE IN MICROFARADS.
3. INDUCTOR VALUES ARE IN MICROHENRIES.
4. DIODES ARE P/N 013-599.
5. COMPONENTS MOUNTED ON COVER.
6. MOUNTED ON HEAT SINK (1450574-01)
7. SCHEMATIC REFLECTS PWA 1450593-04
8. HEATSINK REQUIRED.

I.C. LIST							
REF. DESIG.	U8	U3,6,11,13	U1,U9,	U5,	U2,U10	U4,U12	U7
AMPEX P/N	587-086	590-972	590-993	590-994	589-479	587-906	587-086
VENDOR P/N	LM311	MC14573	MC14574	MC14575	CD 40118	CD 40818	LM311
VCC (PIN)	8(+15)	4(+15)	4(+15)	4(+15)	14(+15)	14(+25)	8(+25)
VEE	—	—	—	—	—	7 (+10)	14(+10)
GND	1.4 GND	13	13	13	7	—	—

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
—	—	PCN 18135-3 PRODUCTION RELEASE		
—	A	PCN 18295-3 6-29-82		
—	B	PCN 23245-25	3-17-84	
—	C	PCN 23283-14 PBP 6-26-84		
—	D	PCN 23391-3 DRS 3-19-85		

REF. DESIGNATIONS	
LAST USED	NOT USED
C57	
CR12	
FL2	
L4	
Q47	
R149	
TP6	
U13	
VR4	
TG5	
E8	
P2	

1450593 VPR-80 NEXT ASSY USED ON APPLICATION

QUANTITY PER VERSION — ITEM NO — PART NUMBER — DESCRIPTION — PARTS LIST

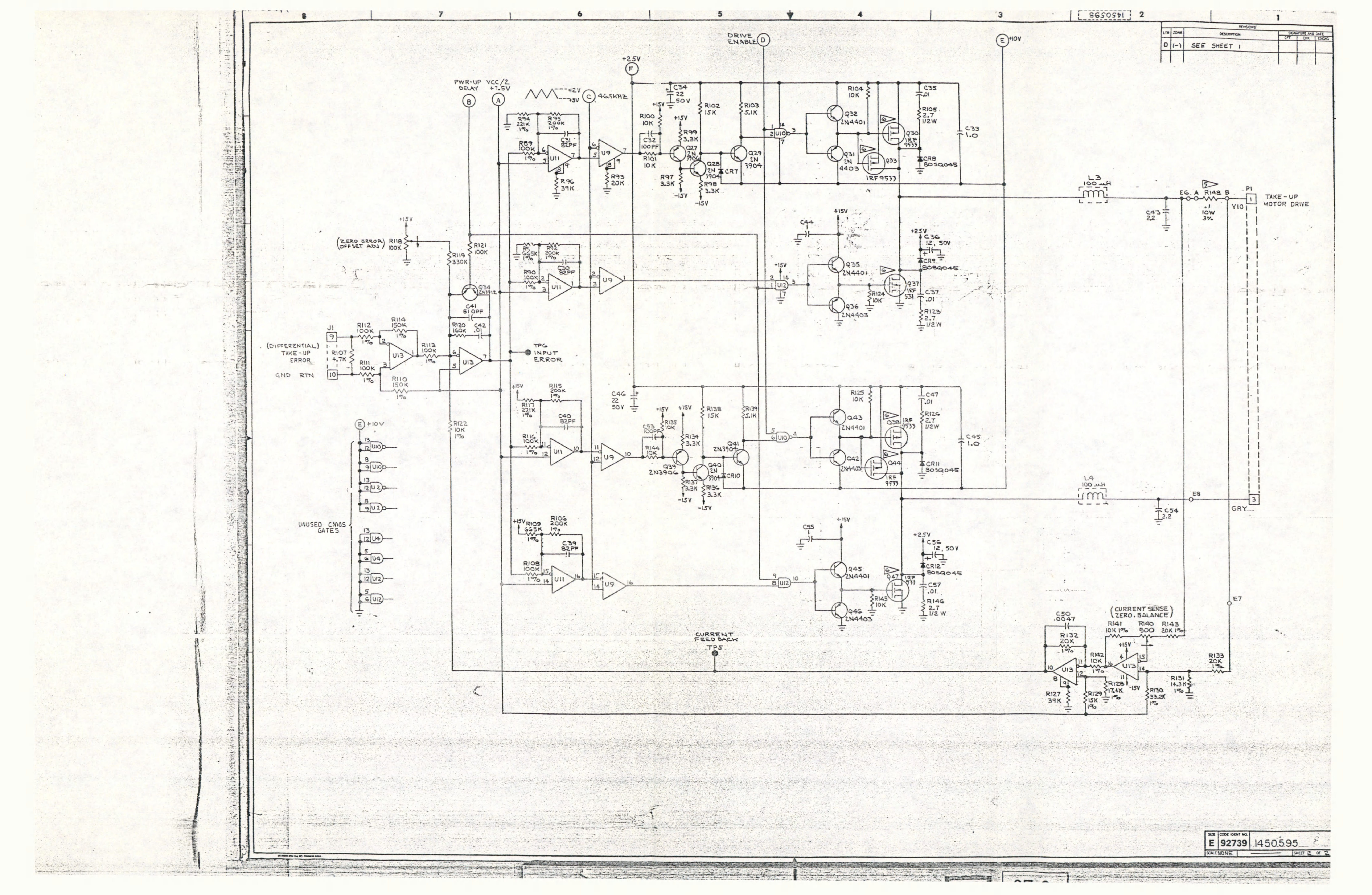
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES. REMOVE BURRS AND SHARP EDGES YES NO. DO NOT SCALE THIS PRINT. MATERIAL: FINISH:

DRAWN BY 3-31-82 · CHK BY 4/29/82 · DFT APPD 4/29/82 · ENGRG APPD 4/21/82 · AUTH BY

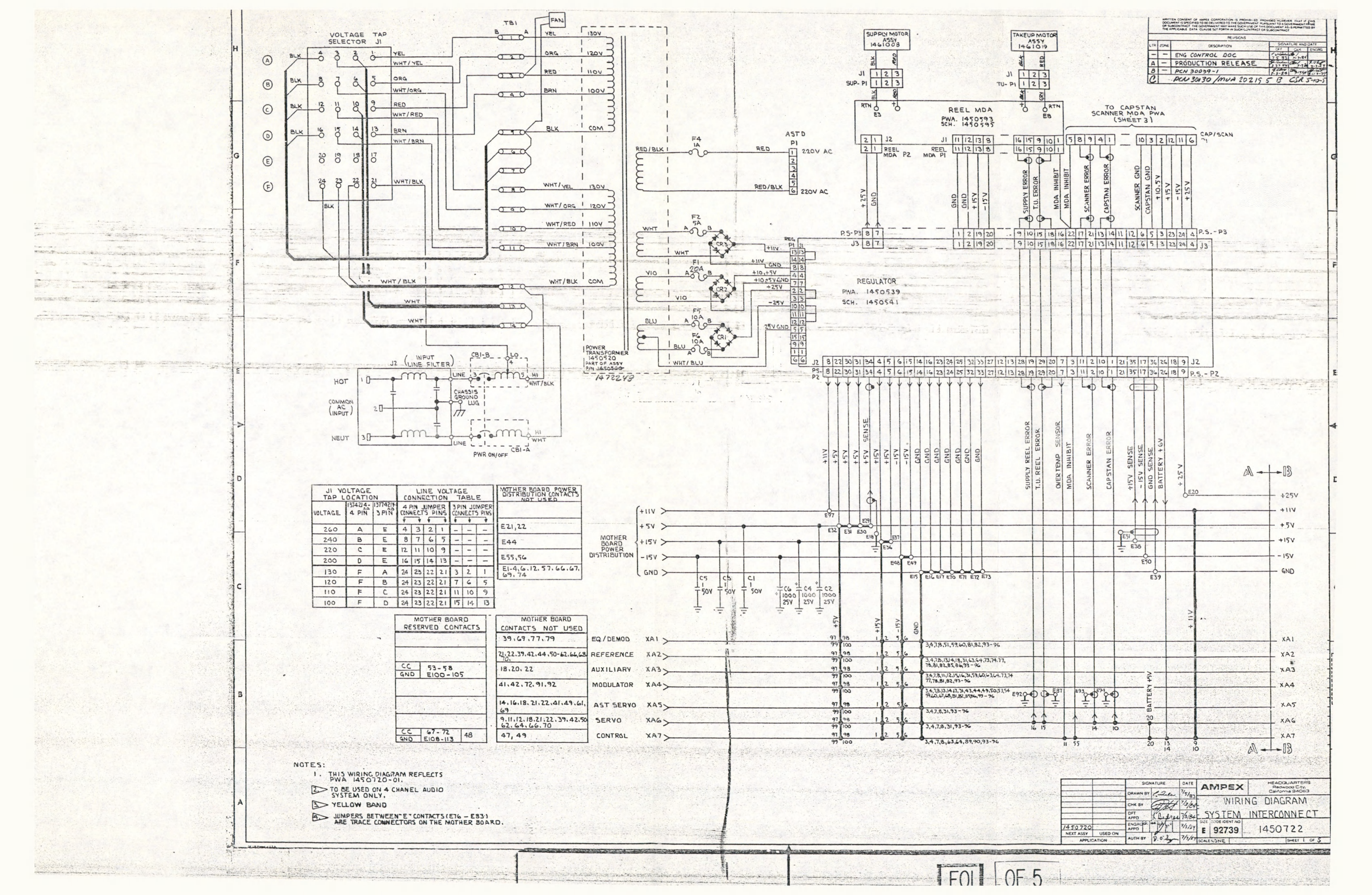
AMPEX HEADQUARTERS Redwood City, California 94063

SCHEMATIC REEL M.D.A.

SIZE E · CODE IDENT NO. 92739 · 1450595 · SCALE NONE · SHEET 1 OF 2



DRIVE ENABLE
+25V
PWR-UP DELAY
VCC/2 +7.5V
46.5KHZ
SEE SHEET 1
TAKE-UP MOTOR DRIVE
(ZERO ERROR) OFFSET ADJ
(DIFFERENTIAL) TAKE-UP ERROR
GND RTN
TP6 INPUT ERROR
UNUSED CMOS GATES
CURRENT FEED BACK
TP5
(CURRENT SENSE ZERO. BALANCE)
GRY
E 92739 1450595
SCALE NONE
SHEET 2 OF 2



J1 VOLTAGE TAP LOCATION			LINE VOLTAGE CONNECTION TABLE						
VOLTAGE	1374214-AA 4 PIN	1377421X-AB 3 PIN	4 PIN JUMPER CONNECTS PINS				3 PIN JUMPER CONNECTS PINS		
260	A	E	4	3	2	1	–	–	–
240	B	E	8	7	6	5	–	–	–
220	C	E	12	11	10	9	–	–	–
200	D	E	16	15	14	13	–	–	–
130	F	A	24	23	22	21	3	2	1
120	F	B	24	23	22	21	7	6	5
110	F	C	24	23	22	21	11	10	9
100	F	D	24	23	22	21	15	14	13

MOTHER BOARD POWER DISTRIBUTION CONTACTS NOT USED
E21,22
E44
E55,56
E1-4,6.12.57.66.67.69.74

MOTHER BOARD RESERVED CONTACTS	MOTHER BOARD CONTACTS NOT USED		
	39.69.77.79	EQ/DEMOD	XA1
	21.22.39.42.44.50-62.66,68 70.	REFERENCE	XA2
CC 53-58 / GND E100-105	18.20.22	AUXILIARY	XA3
	41.42.72.91.92	MODULATOR	XA4
	14.16.18.21.22.41.49.61, 69	AST SERVO	XA5
	9.11.12.18.21.22.39.42.50 62.64.66.70	SERVO	XA6
CC 67-72 / GND E108-113 / 48	47, 49	CONTROL	XA7

NOTES:
1. THIS WIRING DIAGRAM REFLECTS PWA 1450720-01.
2. TO BE USED ON 4 CHANEL AUDIO SYSTEM ONLY.
3. YELLOW BAND
4. JUMPERS BETWEEN "E" CONTACTS (E76 - E83) ARE TRACE CONNECTORS ON THE MOTHER BOARD.

REVISIONS

LTR	ZONE	DESCRIPTION	DFT	CHK	ENGRG
–	–	ENG CONTROL DOC	7 5 83	7-3-84	
A	–	PRODUCTION RELEASE	7 27 84	7-3-84	7-7-84
B	–	PCN 30039-1	7-3-84	7-13-84	7-17-84
C		PCN 30130 / MUA 20219 5 B CSR 5-10-5			

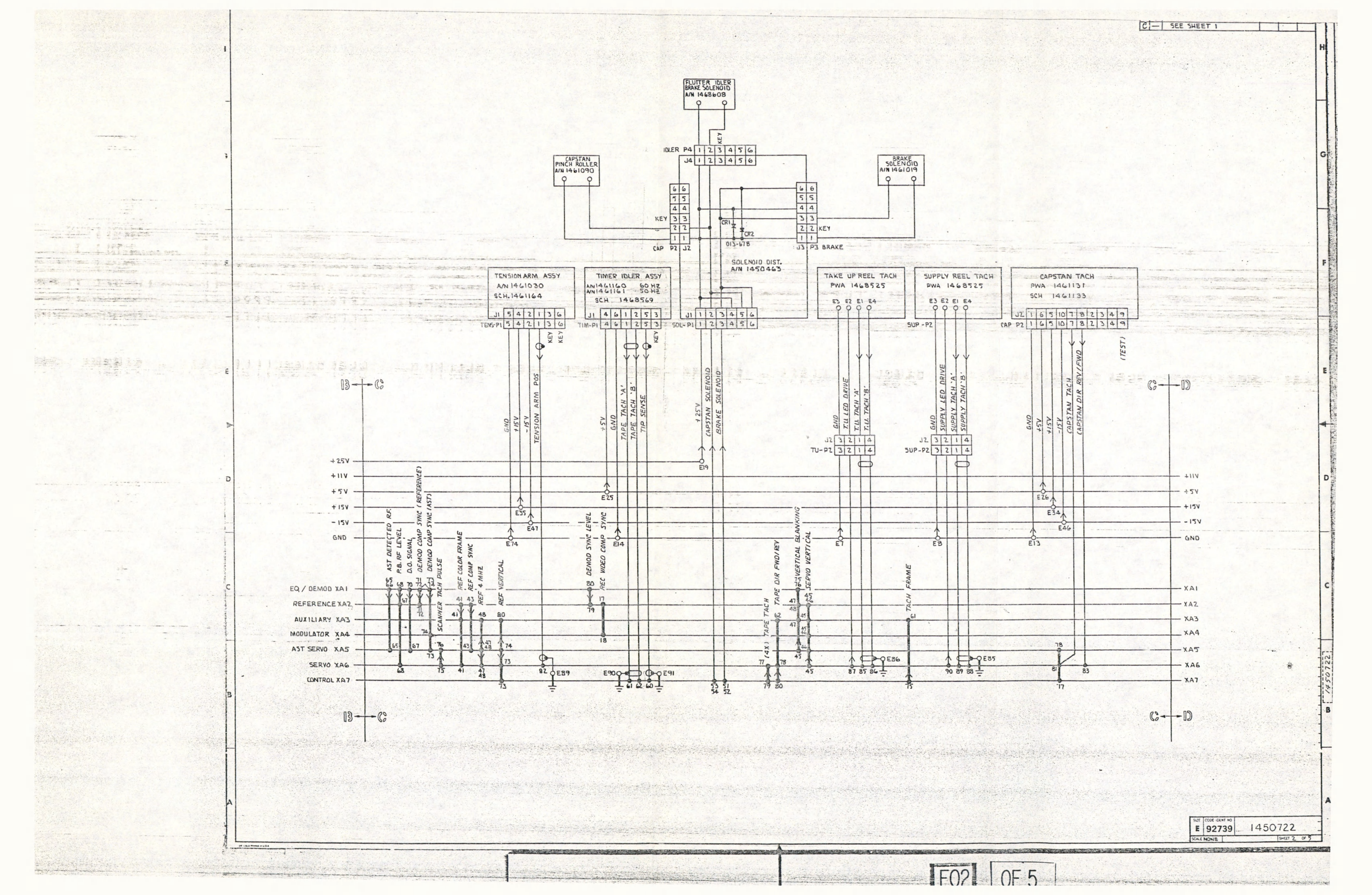
APPLICATION		SIGNATURE		DATE
NEXT ASSY	USED ON	DRAWN BY		7/5/83
1450720		CHK BY		7/3/84
		DFT APPD		7/3/84
		ENGRG APPD		7/3/84
		AUTH BY	D. O'	7/7/84

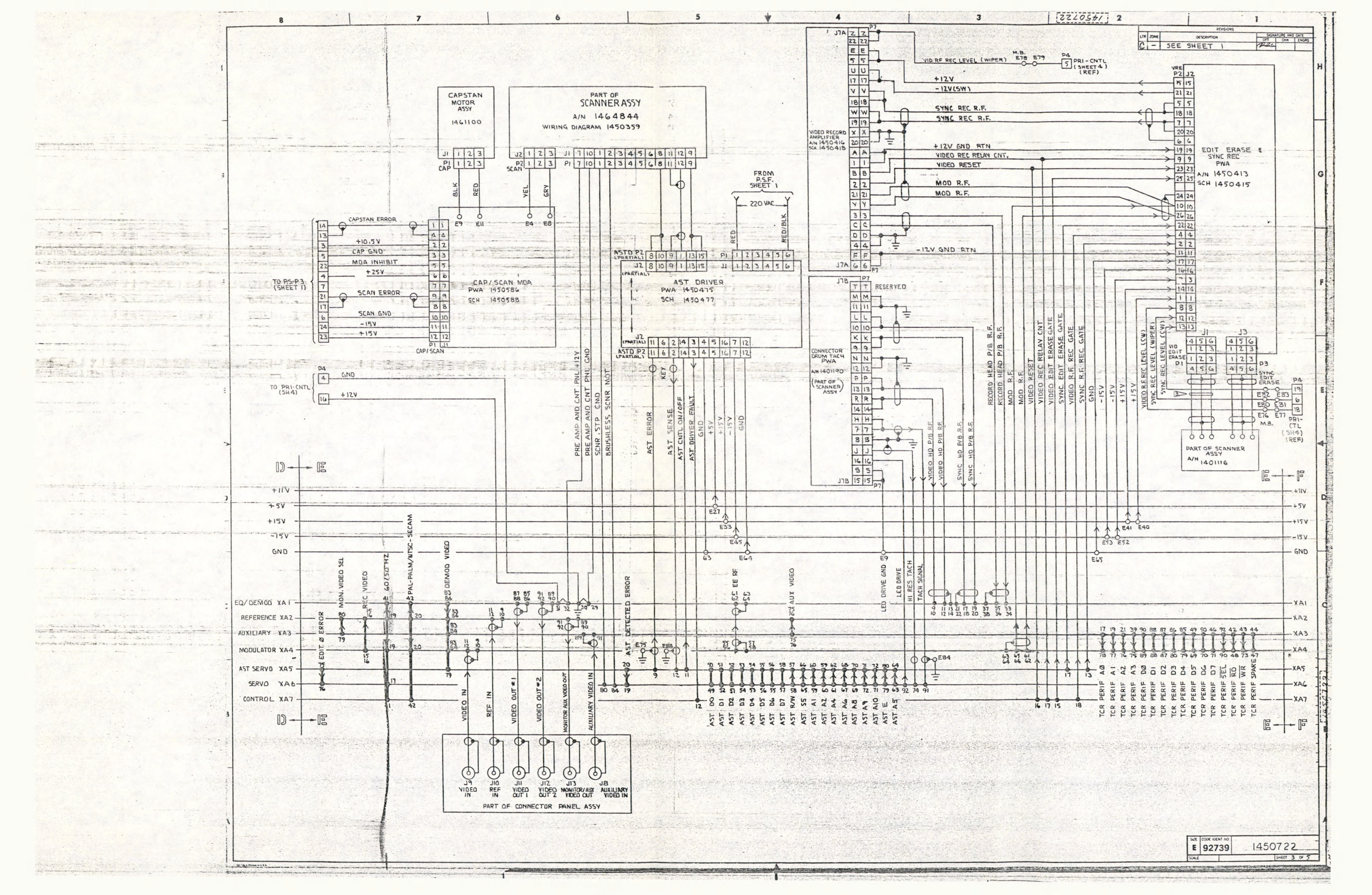
AMPEX HEADQUARTERS Redwood City, California 94063

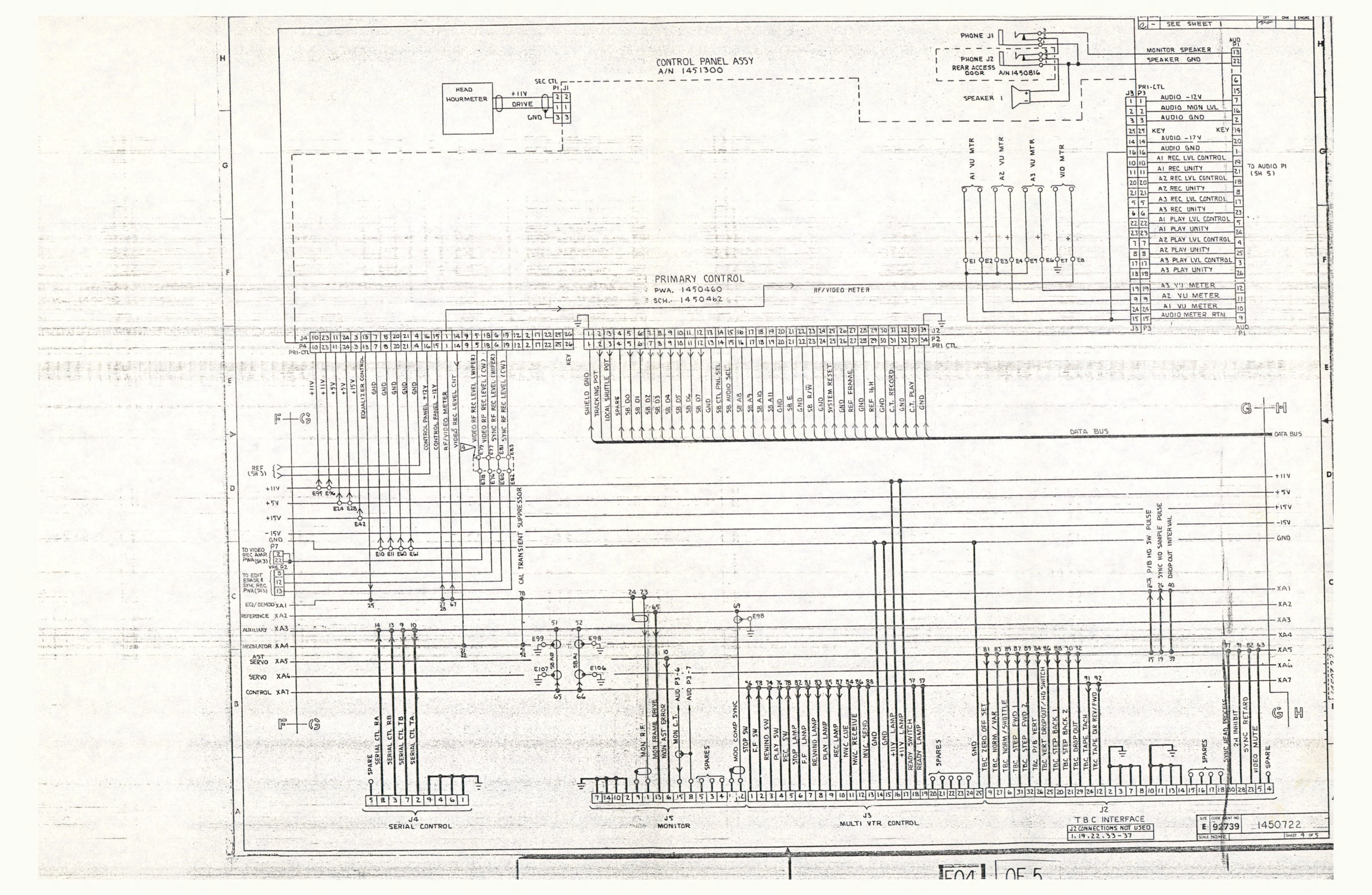
WIRING DIAGRAM SYSTEM INTERCONNECT

SIZE E CODE IDENT NO 92739 1450722

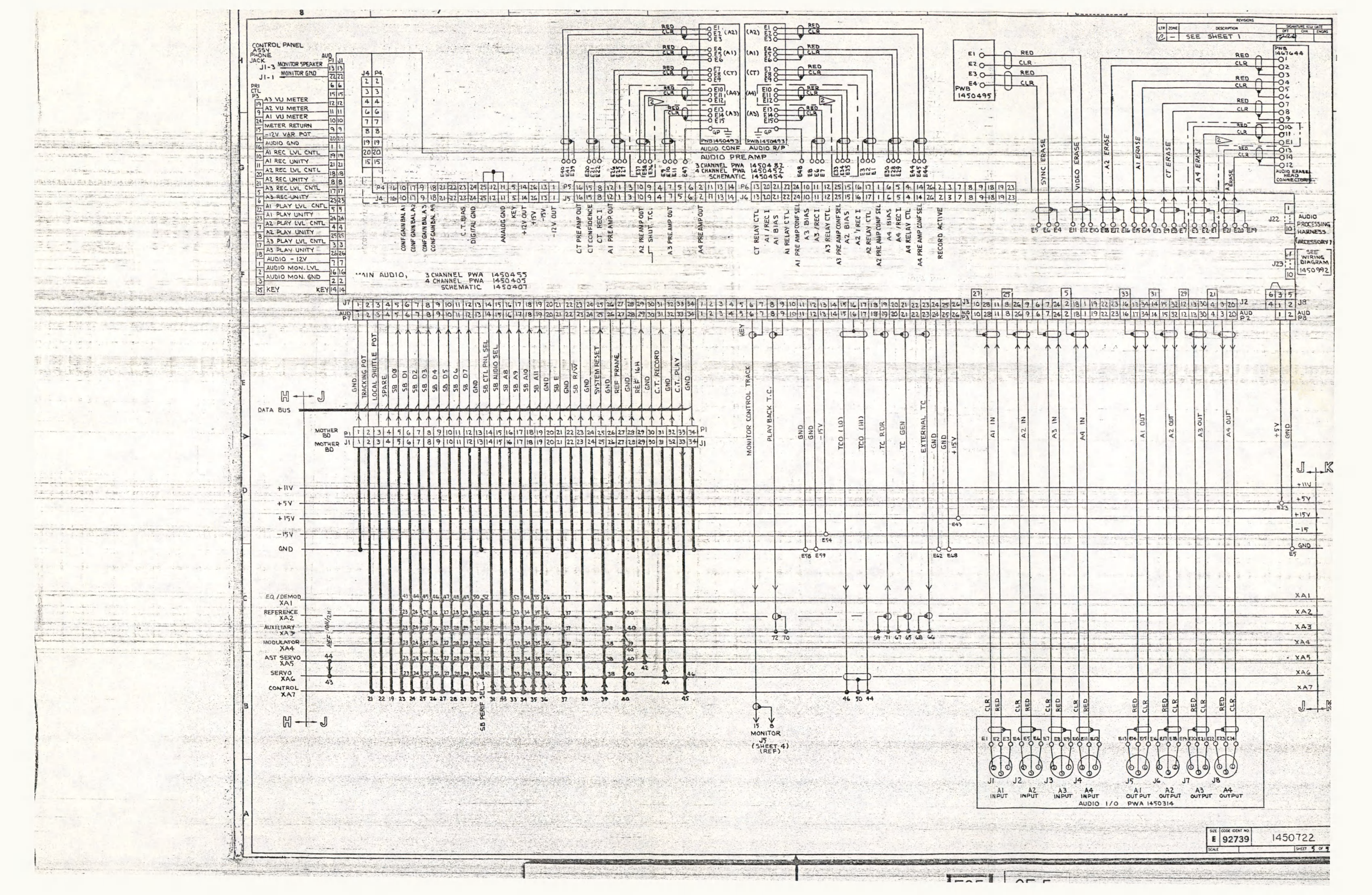
SCALE NONE SHEET 1 OF 5


SEE SHEET 1
FLUTTER IDLER BRAKE SOLENOID A/N 1468608
IDLER P4
J4
KEY
CAPSTAN PINCH ROLLER A/N 1461090
BRAKE SOLENOID A/N 1461019
CAP P2 J2
J3 P3 BRAKE
013-678
SOLENOID DIST. A/N 1450463
TENSION ARM ASSY A/N 1461030 SCH. 1461164
TIMER IDLER ASSY A/N 1461160 60 HZ A/N 1461161 50 HZ SCH 1468569
TAKE UP REEL TACH PWA 1468525
SUPPLY REEL TACH PWA 1468525
CAPSTAN TACH PWA 1461131 SCH 1461133
TENS-P1
TIM-P1
SOL-P1
SUP-P2
CAP P2
(TEST)
GND
+15V
-15V
TENSION ARM POS
+5V
TAPE TACH 'A'
TAPE TACH 'B'
TIP SENSE
+25V
CAPSTAN SOLENOID
BRAKE SOLENOID
T.U. LED DRIVE
T.U. TACH 'A'
T.U. TACH 'B'
SUPPLY LED DRIVE
SUPPLY TACH 'A'
SUPPLY TACH 'B'
CAPSTAN TACH
CAPSTAN DIR REV/FWD
TU-P2
SUP-P2
+11V
AST DETECTED RF
P.B. RF LEVEL
D.O. SIGNAL
DEMOD COMP SYNC (REFERENCE)
DEMOD COMP SYNC (AST)
SCANNER TACH PULSE
REF COLOR FRAME
REF COMP SYNC
REF 4 MHZ
REF VERTICAL
DEMOD SYNC LEVEL
REC VIDEO COMP SYNC
(4X) TAPE TACH
TAPE DIR FWD/REV
VERTICAL BLANKING
SERVO VERTICAL
TACH FRAME
EQ / DEMOD XA1
REFERENCE XA2
AUXILIARY XA3
MODULATOR XA4
AST SERVO XA5
SERVO XA6
CONTROL XA7
XA1
XA2
XA3
XA4
XA5
XA6
XA7
E92739
1450722
SCALE NONE
SHEET 2 OF 5
F02 OF 5

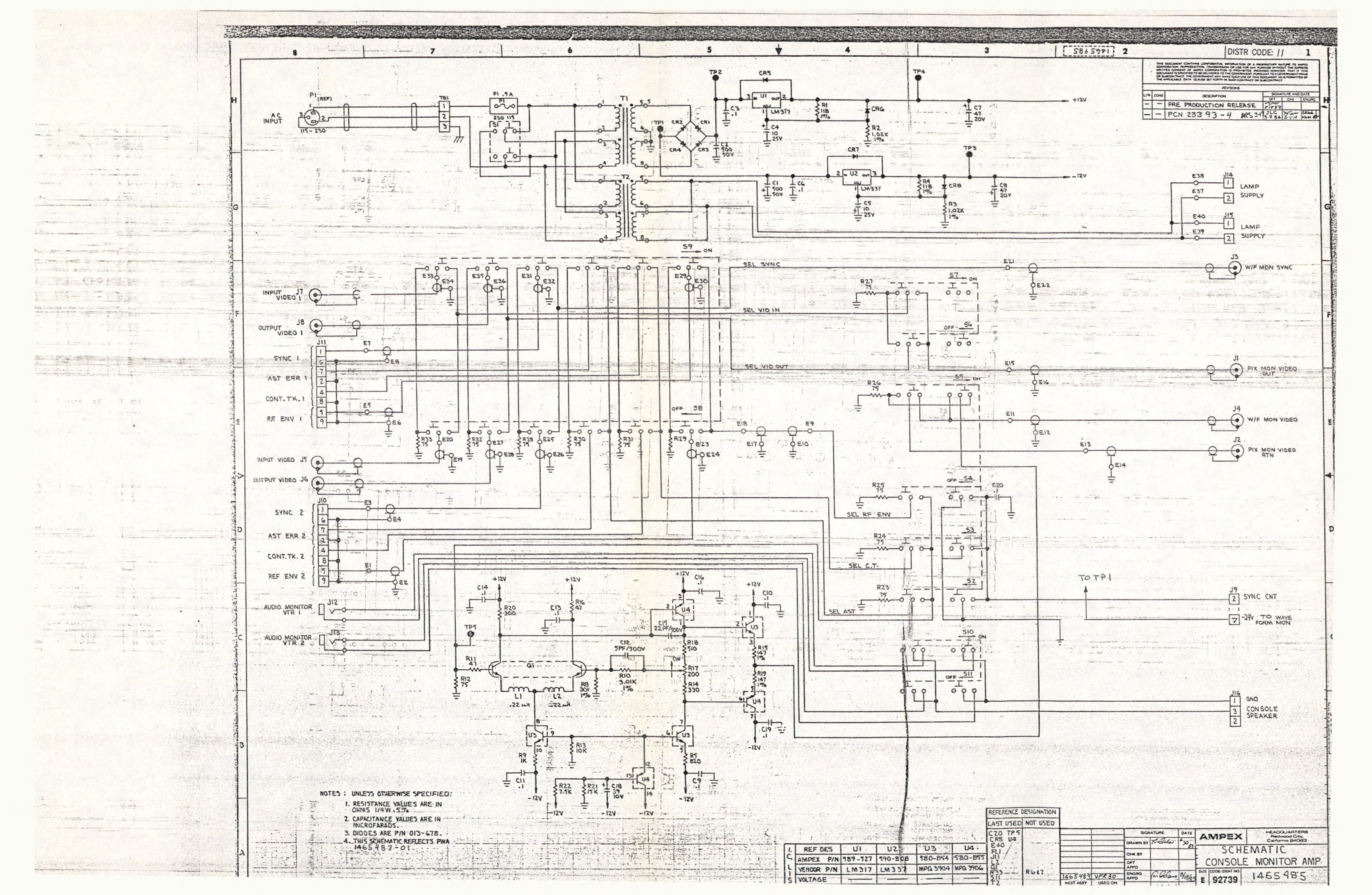

CAPSTAN MOTOR ASSY
1461100
PART OF SCANNER ASSY
A/N 1464844
WIRING DIAGRAM 1450359
CAP/SCAN MDA
PWA 1450586
SCH 1450588
AST DRIVER
PWA 1450475
SCH 1450477
FROM P.S.F. SHEET 1
220 VAC
VIDEO RECORD AMPLIFIER
A/N 1450416
SCH 1450418
EDIT ERASE & SYNC REC PWA
A/N 1450413
SCH 1450415
CONNECTOR DRUM TACH PWA
A/N 1401190
(PART OF SCANNER ASSY)
PART OF SCANNER ASSY
A/N 1401116
TO PS-P3 (SHEET 1)
TO PRI-CNTL (SH4)
CAPSTAN ERROR
+10.5V
CAP GND
MDA INHIBIT
+25V
SCAN ERROR
SCAN GND
-15V
+15V
+12V
-12V(SW)
SYNC REC R.F.
+12V GND RTN
VIDEO REC RELAY CNT.
VIDEO RESET
MOD R.F.
-12V GND RTN
VID RF REC LEVEL (WIPER)
PRI-CNTL (SHEET 4) (REF)
RESERVED
EQ/DEMOD XA1
REFERENCE XA2
AUXILIARY XA3
MODULATOR XA4
AST SERVO XA5
SERVO XA6
CONTROL XA7
+11V
+5V
+15V
-15V
GND
VIDEO IN
REF. IN
VIDEO OUT #1
VIDEO OUT #2
MONITOR AUX VIDEO OUT
AUXILIARY VIDEO IN
J9 VIDEO IN
J10 REF IN
J11 VIDEO OUT 1
J12 VIDEO OUT 2
J13 MONITOR/AUX VIDEO OUT
J8 AUXILIARY VIDEO IN
PART OF CONNECTOR PANEL ASSY
PRE AMP AND CNT PNL +12V
PRE AMP AND CNT PNL GND
SCNR STP CND
BRUSHLESS SCNR MOT
AST ERROR
AST SENSE
AST CNTL ON/OFF
AST DRIVER FAULT
AST DETECTED ERROR
EDIT Ø ERROR
MON. VIDEO SEL
REC VIDEO
60/50 HZ
PAL-PALM/NTSC-SECAM
DEMOD VIDEO
EE RF
AUX VIDEO
LED DRIVE GND
LED DRIVE
HI RES TACH
TACH SIGNAL
VIDEO HD P/B R.F.
SYNC HD P/B R.F.
RECORD HEAD P/B R.F.
VIDEO RESET
VIDEO REC RELAY CNT
VIDEO EDIT ERASE GATE
SYNC EDIT ERASE GATE
VIDEO R.F. REC GATE
SYNC R.F. REC GATE
VIDEO R.F. REC LEVEL (CW)
SYNC REC LEVEL (WIPER)
SYNC REC LEVEL (CW)
AST D0 AST D1 AST D2 AST D3 AST D4 AST D5 AST D6 AST D7 AST R/W AST SS AST A1 AST A2 AST A3 AST A4 AST A6 AST A8 AST A9 AST A10 AST E AST A5
TCR PERIF A0 A1 A2 A3 D0 D1 D2 D3 D4 D5 D6 D7 SEL RD WR SPARE
REVISIONS
C - SEE SHEET 1
E 92739 1450722
SHEET 3 OF 5

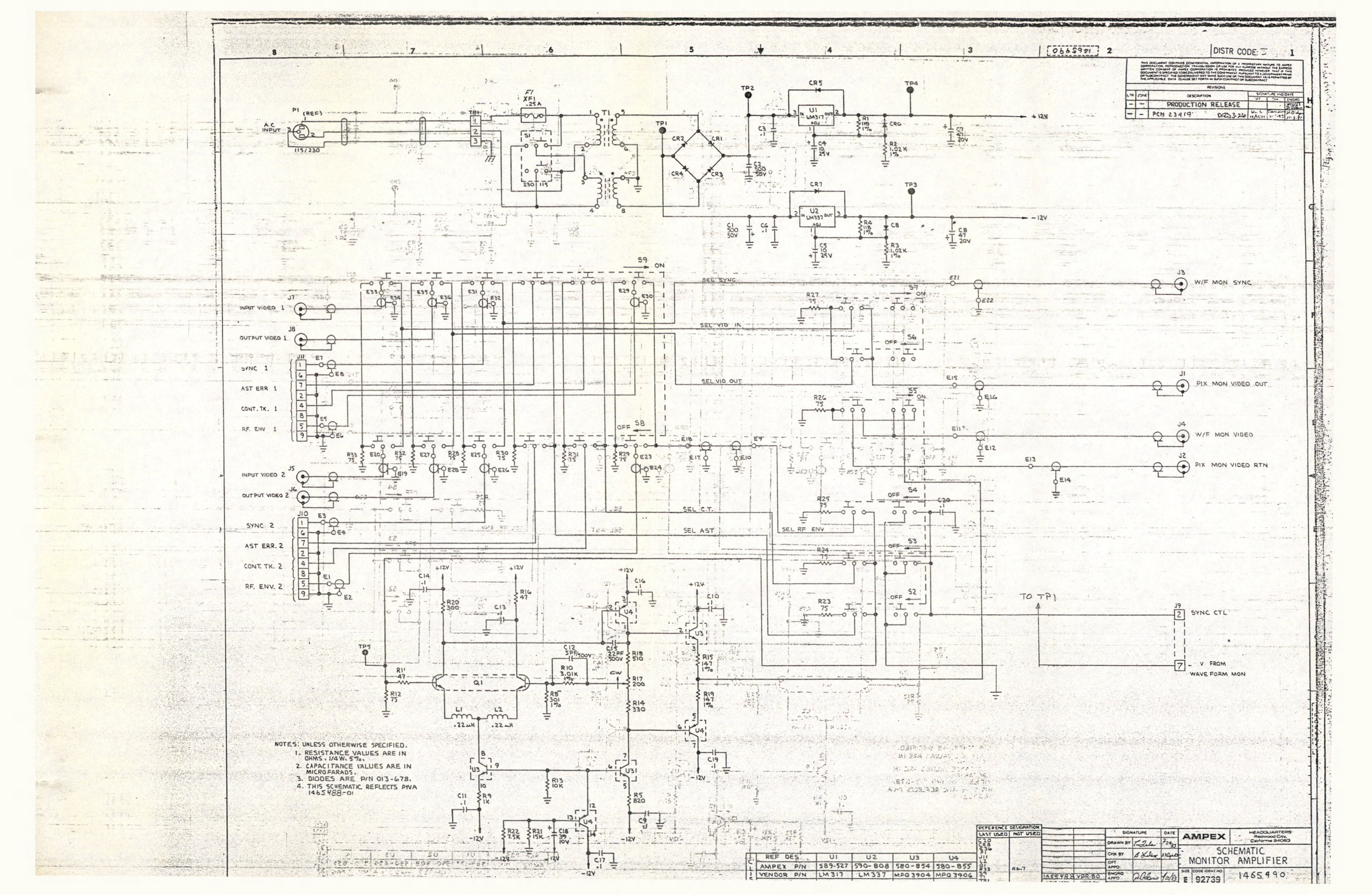


CONTROL PANEL ASSY
A/N 1451300
HEAD HOURMETER
SEC CTL
+11V
DRIVE
GND
PHONE J1
PHONE J2
REAR ACCESS DOOR
A/N 1450816
SPEAKER 1
SEE SHEET 1
MONITOR SPEAKER
SPEAKER GND
PRI-CTL
AUDIO -12V
AUDIO MON LVL
AUDIO GND
KEY
AUDIO -17V
AUDIO GND
A1 REC LVL CONTROL
A1 REC UNITY
A2 REC LVL CONTROL
A2 REC UNITY
A3 REC LVL CONTROL
A3 REC UNITY
A1 PLAY LVL CONTROL
A1 PLAY UNITY
A2 PLAY LVL CONTROL
A2 PLAY UNITY
A3 PLAY LVL CONTROL
A3 PLAY UNITY
A3 VU METER
A2 VU METER
A1 VU METER
AUDIO METER RTN
TO AUDIO P1 (SH 5)
A1 VU MTR
A2 VU MTR
A3 VU MTR
VID MTR
PRIMARY CONTROL
PWA. 1450460
SCH. 1450462
RF/VIDEO METER
DATA BUS
+11V
+5V
+15V
-15V
GND
XA1
XA2
XA3
XA4
XA5
XA6
XA7
REF (SH 3)
TO VIDEO REC AMP. PWA (SH 3)
TO EDIT ERASE & SYNC REC. PWA (SH 3)
EQ/DEMOD
REFERENCE
AUXILIARY
MODULATOR
AST SERVO
SERVO
CONTROL
CAL TRANSIENT SUPPRESSOR
EQUALIZER CONTROL
CONTROL PANEL +12V
CONTROL PANEL -12V
RF/VIDEO METER
VIDEO REC LEVEL CNT
VIDEO RF REC LEVEL (WIPER)
VIDEO RF REC LEVEL (CW)
SYNC RF REC LEVEL (WIPER)
SYNC RF REC LEVEL (CW)
SHIELD GND
TRACKING POT
LOCAL SHUTTLE POT
SPARE
SB D0
SB D1
SB D2
SB D3
SB D4
SB D5
SB D6
SB D7
SB CTL PNL SEL
SB AUDIO SEL
SB A8
SB A9
SB A10
SB A11
SB E
SB R/W
SYSTEM RESET
REF FRAME
REF 16H
C.T. RECORD
C.T. PLAY
P/B HD SW PULSE
SYNC HD SAMPLE PULSE
DROPOUT INTERVAL
SERIAL CTL RA
SERIAL CTL RB
SERIAL CTL TB
SERIAL CTL TA
MON R.F.
MON FRAME DRIVE
MON AST ERROR
MON C.T.
AUD P3-6
AUD P3-7
SPARES
MOD COMP SYNC
STOP SW
F.F SW
REWIND SW
PLAY SW
REC SW
STOP LAMP
F.F LAMP
REWIND LAMP
PLAY LAMP
REC LAMP
MVC CUE
MVC RECEIVE
MVC SEND
+11V LAMP
READY SWITCH
READY LAMP
TBC ZERO OFF SET
TBC NORM / VAR
TBC NORM / SHUTTLE
TBC STEP FWD 1
TBC STEP FWD 2
TBC P/B VERT
TBC VERT DROPOUT / HD SWITCH
TBC STEP BACK 1
TBC STEP BACK 2
TBC DROP OUT
TBC TAPE TACH
TBC TAPE DIR REV/FWD
SYNC HEAD PROCESS
2H INHIBIT
SYNC RETARD
VIDEO MUTE
J4 SERIAL CONTROL
J5 MONITOR
J3 MULTI VTR CONTROL
J2 TBC INTERFACE
J2 CONNECTIONS NOT USED 1, 19, 22, 33-37
E 92739
1450722
SCALE NONE
SHEET 4 OF 5
F04 OF 5

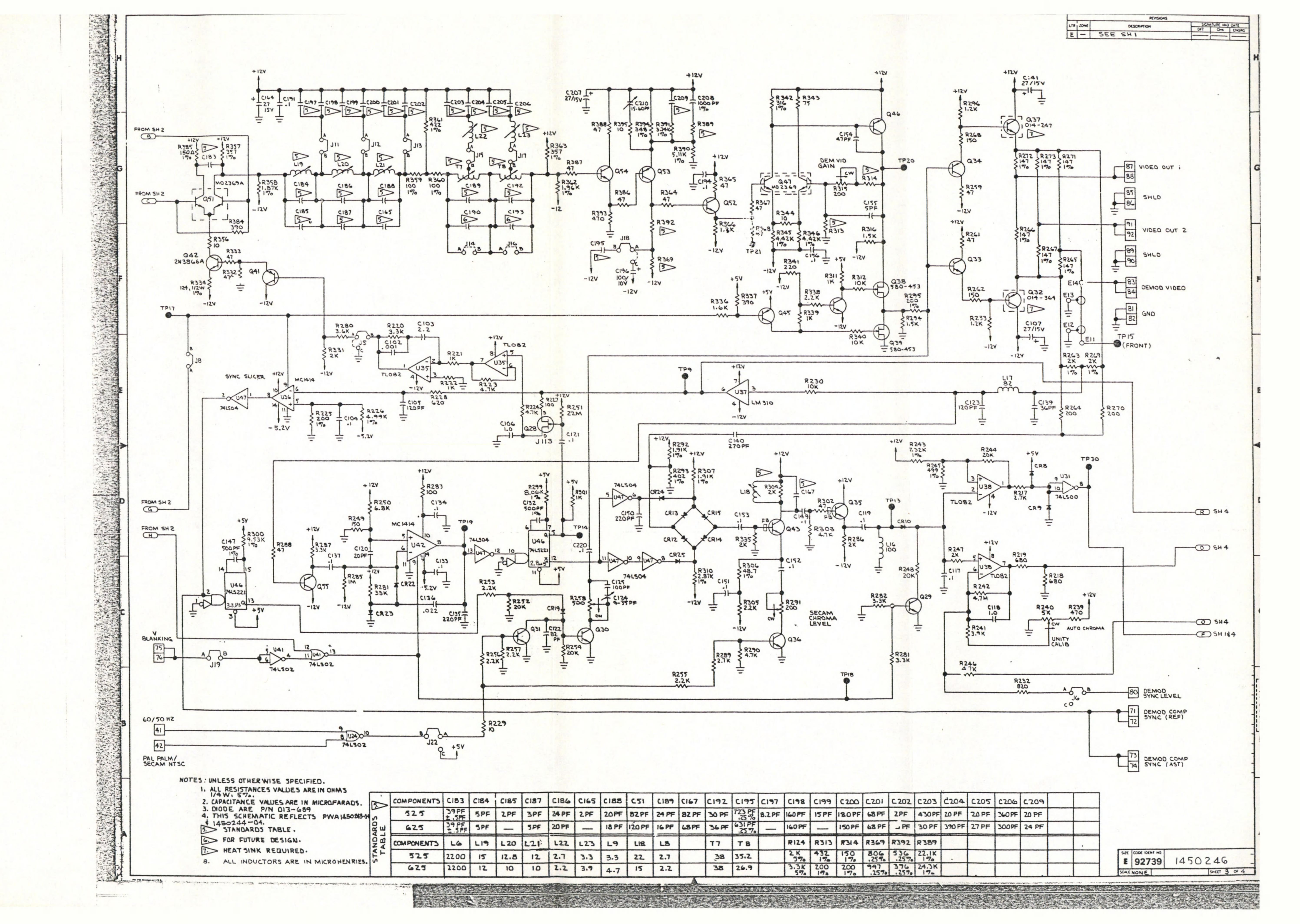


CONTROL PANEL ASSY PHONE JACK
J1-3 MONITOR SPEAKER
J1-1 MONITOR GND
PRI CTL P3
A3 VU METER
A2 VU METER
A1 VU METER
METER RETURN
-12V VAR POT
AUDIO GND
A1 REC LVL CNTL
A1 REC UNITY
A2 REC LVL CNTL
A2 REC UNITY
A3 REC LVL CNTL
A3 REC UNITY
A1 PLAY LVL CNTL
A1 PLAY UNITY
A2 PLAY LVL CNTL
A2 PLAY UNITY
A3 PLAY LVL CNTL
A3 PLAY UNITY
AUDIO -12V
AUDIO MON. LVL
AUDIO MON. GND
KEY
MAIN AUDIO, 3 CHANNEL PWA 1450455
4 CHANNEL PWA 1450405
SCHEMATIC 1450407
AUDIO PREAMP
3 CHANNEL PWA 1450482
4 CHANNEL PWA 1450452
SCHEMATIC 1450454
PWB 1450493 AUDIO CONF
PWB 1450493 AUDIO R/P
PWB 1450495
PWB 1447644
AUDIO ERASE HEAD CONNECTORS
SYNC ERASE
VIDEO ERASE
A2 ERASE
A1 ERASE
CT ERASE
A4 ERASE
A3 ERASE
AUDIO PROCESSING HARNESS (ACCESSORY)
SEE WIRING DIAGRAM 1450992
CONF GAIN BAL A1
CONF GAIN BAL A2
CONF GAIN BAL A3
CONF GAIN BAL A4
C.T. BIAS
DIGITAL GND
ANALOG GND
KEY
+12V OUT
+15V
-15V
-12V OUT
CT PREAMP OUT
CT CONFIDENCE
CT REC I
A1 PREAMP OUT
A2 PREAMP OUT
SHUT. T.C.
A3 PREAMP OUT
A4 PREAMP OUT
CT RELAY CTL
A1 /REC I
A1 BIAS
A1 RELAY CTL
A1 PREAMP CONF SEL
A3 BIAS
A3 /REC I
A3 RELAY CTL
A3 PREAMP CONF SEL
A2 BIAS
A2 /REC I
A2 RELAY CTL
A2 PREAMP CONF SEL
A4 BIAS
A4 /REC I
A4 RELAY CTL
A4 PREAMP CONF SEL
RECORD ACTIVE
GND
TRACKING POT
LOCAL SHUTTLE POT
SPARE
SB D0
SB D1
SB D2
SB D3
SB D4
SB D5
SB D6
SB D7
GND
SB CTL PNL SEL
SB AUDIO SEL
SB A8
SB A9
SB A10
SB A11
GND
SB E
GND
SB R/W
GND
SYSTEM RESET
GND
REF FRAME
GND
REF 1GH
GND
C.T. RECORD
GND
C.T. PLAY
GND
MONITOR CONTROL TRACK
PLAYBACK T.C.
-15V
TCO (LO)
TCO (HI)
TC RDR
TC GEN
EXTERNAL TC
+15V
A1 IN
A2 IN
A3 IN
A4 IN
A1 OUT
A2 OUT
A3 OUT
A4 OUT
+5V
DATA BUS
MOTHER BD
+11V
+5V
+15V
-15V
GND
EQ /DEMOD XA1
REFERENCE XA2
AUXILIARY XA3
MODULATOR XA4
AST SERVO XA5
SERVO XA6
CONTROL XA7
SB PERIF SEL
MONITOR J5 (SHEET 4) (REF)
A1 INPUT
A2 INPUT
A3 INPUT
A4 INPUT
A1 OUTPUT
A2 OUTPUT
A3 OUTPUT
A4 OUTPUT
AUDIO I/O PWA 1450314
SEE SHEET 1
E 92739 1450722
SHEET 5 OF 5


DISTR CODE: 11
1465485
PRE PRODUCTION RELEASE
PCN 23393-4
AC INPUT
115-230
P1 (REF)
TB1
F1 .5A
S1
230 115
T1
T2
TP1
TP2
TP3
TP4
TP5
CR1
CR2
CR3
CR4
CR5
CR6
CR7
CR8
U1
LM317
U2
LM337
+12V
-12V
LAMP SUPPLY
S9 ON
SEL SYNC
SEL VID IN
SEL VID OUT
SEL RF ENV
SEL C.T.
SEL AST
INPUT VIDEO 1
OUTPUT VIDEO 1
SYNC 1
AST ERR 1
CONT. TK. 1
RF ENV 1
INPUT VIDEO J5
OUTPUT VIDEO J6
SYNC 2
AST ERR 2
CONT. TK. 2
REF ENV 2
AUDIO MONITOR VTR 1
AUDIO MONITOR VTR 2
W/F MON SYNC
PIX MON VIDEO OUT
W/F MON VIDEO
PIX MON VIDEO RTN
SYNC CNT
-24V TO WAVE FORM MON
TO TP1
GND
CONSOLE SPEAKER
NOTES: UNLESS OTHERWISE SPECIFIED:
1. RESISTANCE VALUES ARE IN OHMS 1/4W, 5%
2. CAPACITANCE VALUES ARE IN MICROFARADS.
3. DIODES ARE P/N 013-678.
4. THIS SCHEMATIC REFLECTS PWA 1465483-01
REFERENCE DESIGNATION
LAST USED | NOT USED
C20 TP5 CR8 U4 E40 FL1 J11 L2 Q1 R33 S11 T2 | R617
I.C. LIST
REF DES | U1 | U2 | U3 | U4
AMPEX P/N | 589-527 | 590-808 | 580-854 | 580-855
VENDOR P/N | LM317 | LM337 | MPQ3904 | MPQ3906
VOLTAGE
1465483 NEXT ASSY
VPR80 USED ON
DRAWN BY 6/30/83
CHK BY
DFT APPD
ENGRG APPD 8/18/83
AMPEX
HEADQUARTERS Redwood City, California 94063
SCHEMATIC
CONSOLE MONITOR AMP
SIZE E
CODE IDENT NO. 92739
1465485



REF DES	U1	U2	U3	U4
AMPEX P/N	589-527	590-808	580-854	580-855
VENDOR P/N	LM317	LM337	MPQ3904	MPQ3906



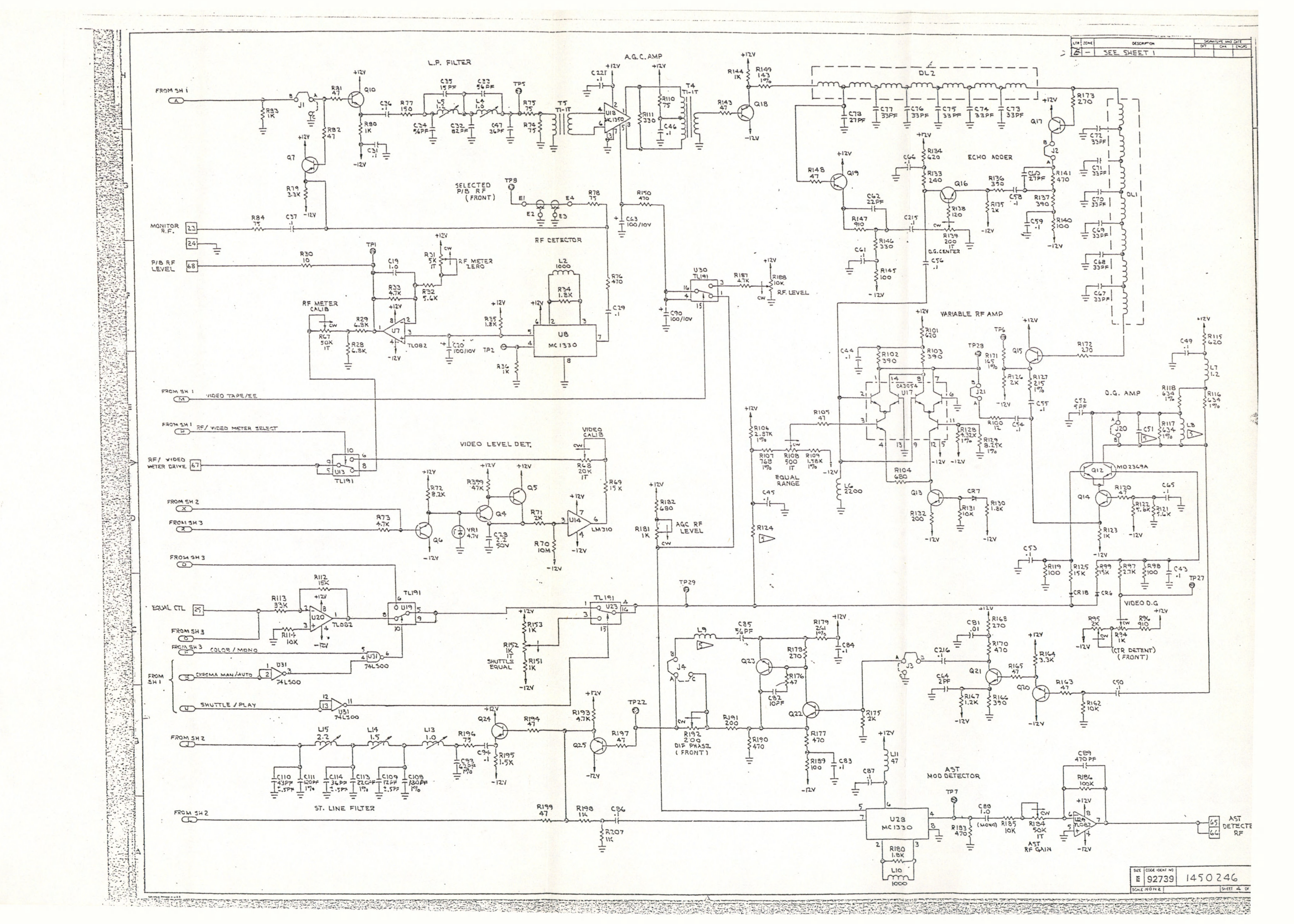
NOTES: UNLESS OTHERWISE SPECIFIED.

1. ALL RESISTANCES VALUES ARE IN OHMS 1/4W, 5%.
2. CAPACITANCE VALUES ARE IN MICROFARADS.
3. DIODE ARE P/N 013-689
4. THIS SCHEMATIC REFLECTS PWA1450243-04 & 1450244-04.
5. STANDARDS TABLE.
6. FOR FUTURE DESIGN.
7. HEAT SINK REQUIRED.
8. ALL INDUCTORS ARE IN MICROHENRIES.

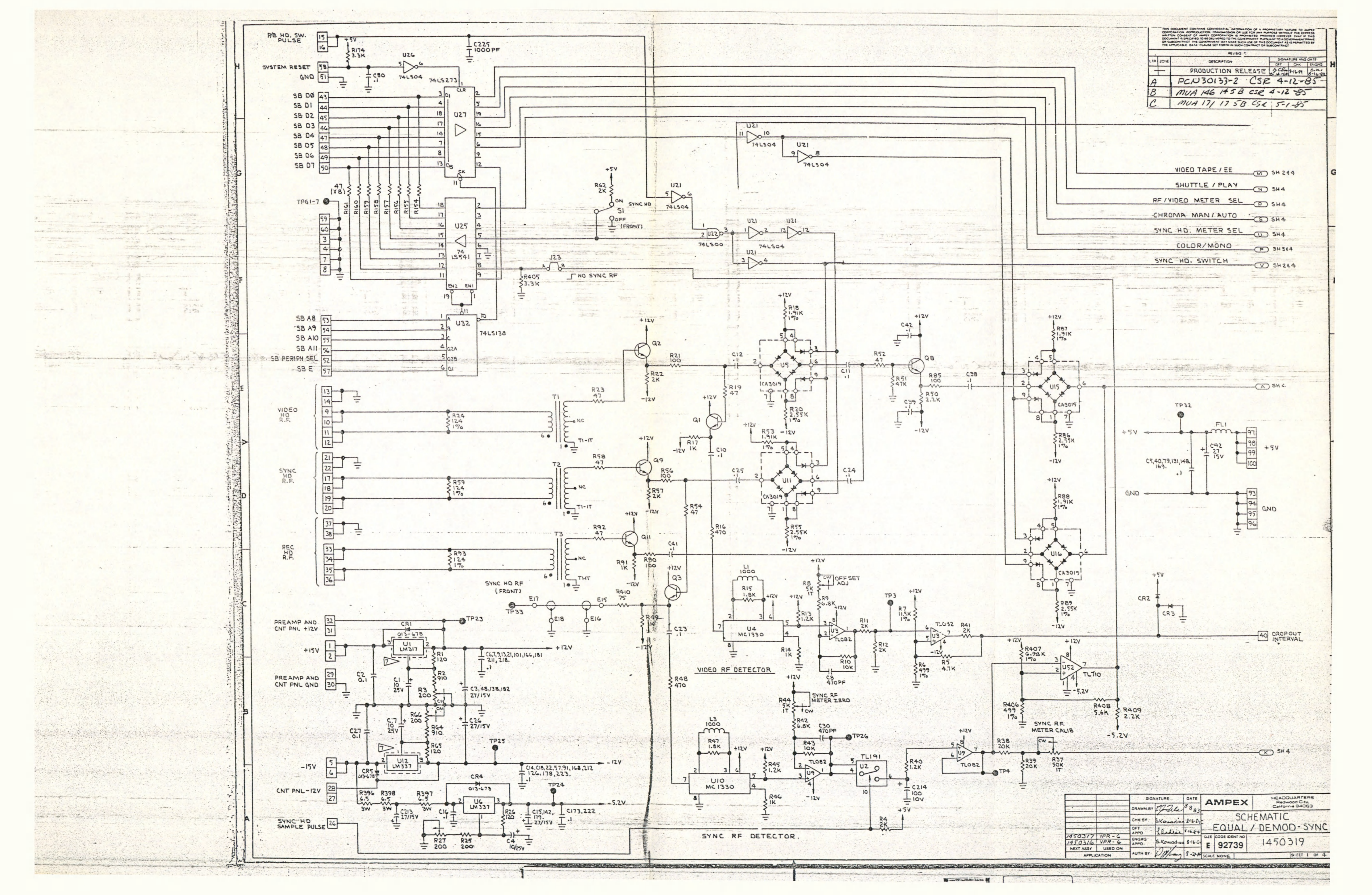
STANDARDS TABLE (5)

COMPONENTS	C183	C184	C185	C187	C186	C165	C188	C51	C189	C167	C192	C195	C197	C198	C199	C200	C201	C202	C203	C204	C205	C206	C209
525	39PF ±.5PF	5PF	2PF	3PF	24PF	2PF	20PF	82PF	24PF	82PF	30PF	723PF .25%	8.2PF	160PF	15PF	180PF	68PF	2PF	430PF	20PF	20PF	360PF	20PF
625	39PF ±.5PF	5PF	—	5PF	20PF	—	18PF	120PF	16PF	68PF	36PF	631PF .25%	—	160PF	—	150PF	68PF	[illegible]PF	30PF	390PF	27PF	300PF	24PF

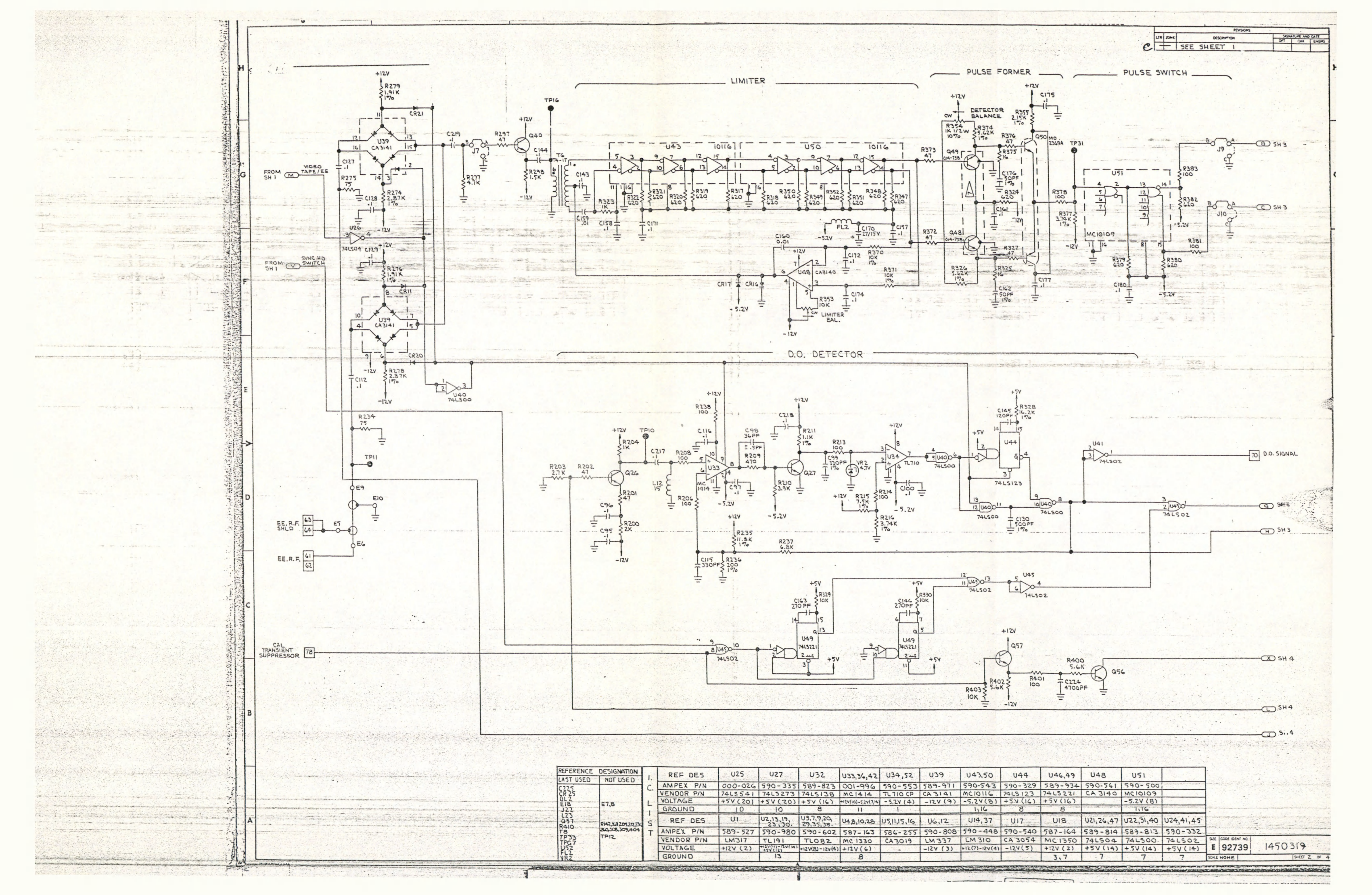
COMPONENTS	L6	L19	L20	L21	L22	L23	L9	L18	L8		T7	T8		R124	R313	R314	R369	R392	R389
525	2200	15	12.8	12	2.7	3.3	3.3	22	2.7		38	35.2		2K 5%	432 1%	150 1%	806 .25%	536 .25%	22.1K 1%
625	2200	12	10	10	2.2	3.9	4.7	15	2.2		38	26.9		3.3K 5%	200 1%	200 1%	947 .25%	376 .25%	24.3K 1%



SEE SHEET 1
L.P. FILTER
A.G.C. AMP
DL2
ECHO ADDER
DL1
FROM SH 1
MONITOR R.F.
SELECTED P/B RF (FRONT)
RF DETECTOR
RF METER ZERO
P/B RF LEVEL
RF METER CALIB
R.F. LEVEL
VARIABLE RF AMP
D.G. CENTER
D.G. AMP
FROM SH 1 VIDEO TAPE/EE
FROM SH 1 RF/VIDEO METER SELECT
VIDEO CALIB
VIDEO LEVEL DET.
RF/VIDEO METER DRIVE
EQUAL RANGE
FROM SH 2
FROM SH 3
AGC RF LEVEL
VIDEO D.G
(CTR DETENT) (FRONT)
EQUAL CTL
FROM SH 3
COLOR / MONO
FROM SH 1
CHROMA MAN/AUTO
SHUTTLE / PLAY
SHUTTLE EQUAL
DIF PHASE (FRONT)
ST. LINE FILTER
AST MOD DETECTOR
AST RF GAIN
AST DETECTED RF
SIZE E
CODE IDENT NO 92739
1450246
SCALE NONE
SHEET 4



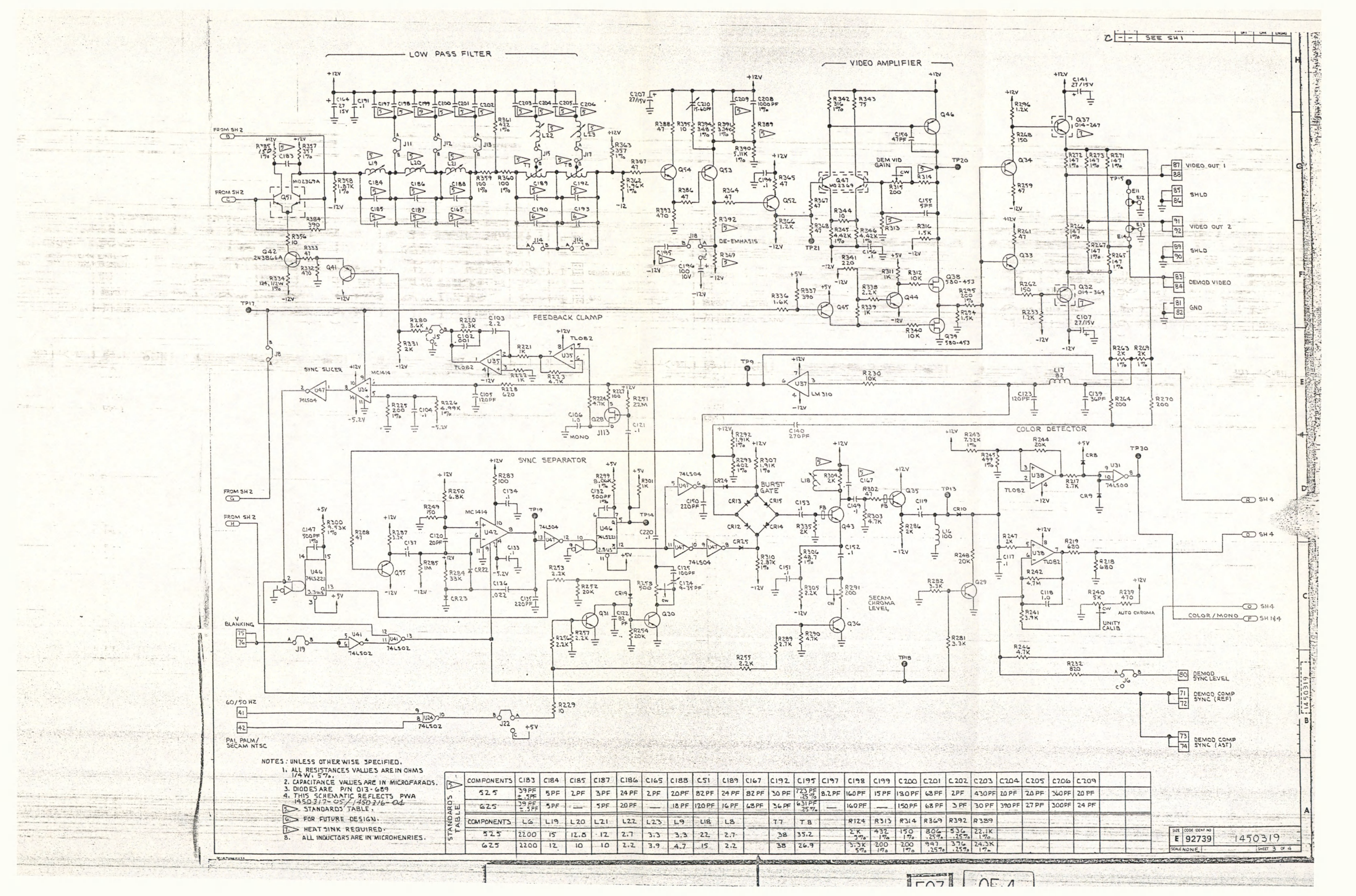
P/B HD. SW. PULSE
SYSTEM RESET
GND
SB D0
SB D1
SB D2
SB D3
SB D4
SB D5
SB D6
SB D7
U27
74LS273
U25
74 LS541
U32
74LS138
SB A8
SB A9
SB A10
SB A11
SB PERIPH SEL
SB E
VIDEO HD R.F.
SYNC HD R.F.
REC HD R.F.
SYNC HD RF (FRONT)
NO SYNC RF
PREAMP AND CNT PNL +12V
+15V
PREAMP AND CNT PNL GND
-15V
CNT PNL -12V
SYNC HD SAMPLE PULSE
VIDEO RF DETECTOR
SYNC RF DETECTOR
OFF SET ADJ
SYNC RF METER ZERO
SYNC RF METER CALIB
DROPOUT INTERVAL
VIDEO TAPE / EE
SHUTTLE / PLAY
RF / VIDEO METER SEL
CHROMA MAN / AUTO
SYNC HD. METER SEL
COLOR / MONO
SYNC HD. SWITCH
PRODUCTION RELEASE
A PCN30133-2 CSR 4-12-85
B MUA 146 145 B CSR 4-12-85
C MUA 171 175 B CSR 5-1-85
AMPEX
HEADQUARTERS Redwood City, California 94063
SCHEMATIC
EQUAL / DEMOD-SYNC
E 92739
1450319
1450317 VPR-6
1450316 VPR-6
NEXT ASSY USED ON
APPLICATION
SCALE NONE
SHEET 1 OF 4



REFERENCE DESIGNATION	
LAST USED	NOT USED
C225 CR25 DL2 E18 J22 L23 Q57 R410 T8 TP33 TPG7 U52 FL2 VR2	E7,8 R142,X8,209,212,234,260,308,309,404 TP12

I.C. LIST

REF DES	U25	U27	U32	U33,36,42	U34,52	U39	U43,50	U44	U46,49	U48	U51	
AMPEX P/N	000-026	590-335	589-823	001-996	590-553	589-971	590-543	590-329	589-934	590-561	590-500	
VENDOR P/N	74LS541	74LS273	74LS138	MC1414	TL710 CP	CA3141	MC10116	74LS123	74LS221	CA 3140	MC10109	
VOLTAGE	+5V (20)	+5V (20)	+5V (16)	+12V(10)-5.2V(7,14)	-5.2V (4)	-12V (9)	-5.2V (8)	+5V (16)	+5V (16)		-5.2V (8)	
GROUND	10	10	8	11	1		1,16	8	8		1,16	
REF DES	U1	U2,13,19,23,30.	U3,7,9,20,29,35,38.	U4,8,10,28	U5,11,15,16	U6,12	U14,37	U17	U18	U21,26,47	U22,31,40	U24,41,45
AMPEX P/N	589-527	590-980	590-602	587-163	586-255	590-808	590-448	590-540	587-164	589-814	589-813	590-332
VENDOR P/N	LM317	TL191	TL082	MC1330	CA3019	LM337	LM310	CA3054	MC1350	74LS04	74LS00	74LS02
VOLTAGE	+12V (2)	+12V(11)-12V(14) +5V(12)	+12V(8)-12V(4)	+12V (6)	-	-12V (3)	+12(7)-12V(4)	-12V (5)	+12V (2)	+5V (14)	+5V (14)	+5V (14)
GROUND		13		8					3,7	7	7	7



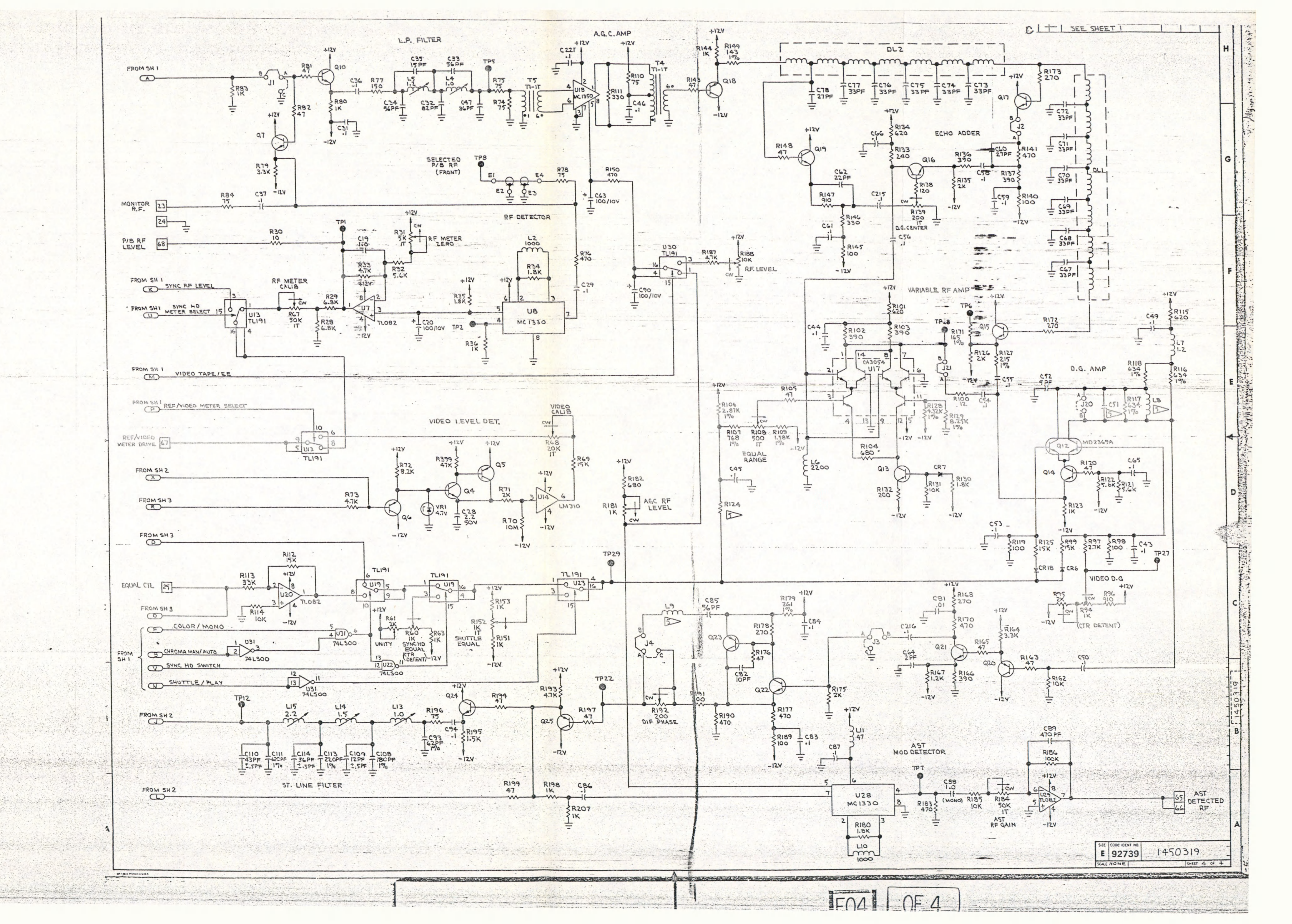
NOTES: UNLESS OTHERWISE SPECIFIED.

1. ALL RESISTANCES VALUES ARE IN OHMS 1/4 W, 5%.
2. CAPACITANCE VALUES ARE IN MICROFARADS.
3. DIODES ARE P/N 013-689
4. THIS SCHEMATIC REFLECTS PWA 1450317-05/1450316-04
5. STANDARDS TABLE.
6. FOR FUTURE DESIGN.
7. HEAT SINK REQUIRED.
8. ALL INDUCTORS ARE IN MICROHENRIES.

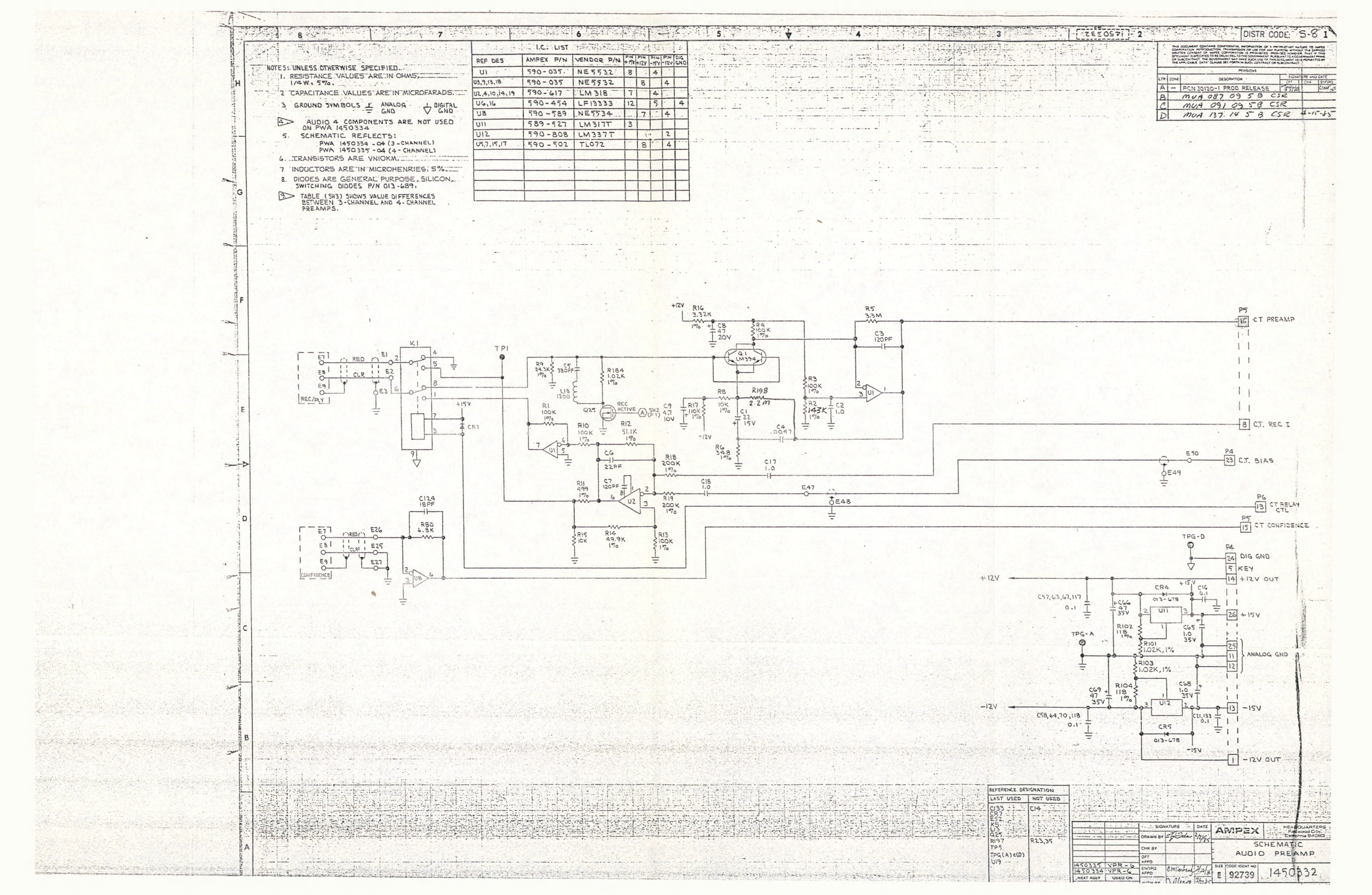
STANDARDS TABLE (5)

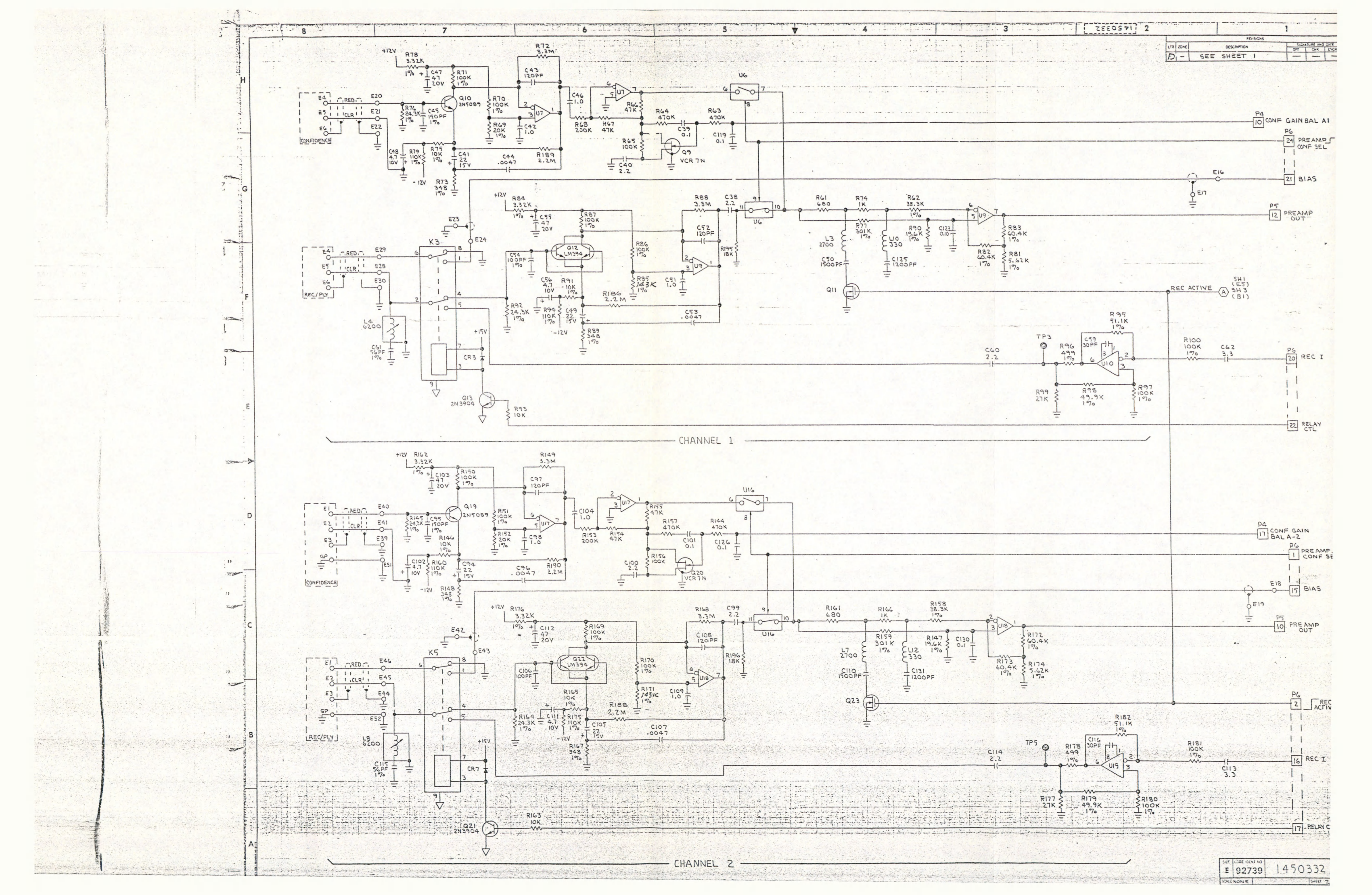
COMPONENTS	C183	C184	C185	C187	C186	C165	C188	C51	C189	C167	C192	C195	C197	C198	C199	C200	C201	C202	C203	C204	C205	C206	C209
525	39PF ±.5PF	5PF	2PF	3PF	24PF	2PF	20PF	82PF	24PF	82PF	30PF	723PF .25%	8.2PF	160PF	15PF	180PF	68PF	2PF	430PF	20PF	20PF	360PF	20PF
625	39PF ±.5PF	5PF	—	5PF	20PF	—	18PF	120PF	16PF	68PF	36PF	631PF .25%	—	160PF	—	150PF	68PF	3PF	30PF	390PF	27PF	300PF	24PF
COMPONENTS	L6	L19	L20	L21	L22	L23	L9	L18	L8		T7	T8		R124	R313	R314	R369	R392	R389				
525	2200	15	12.8	12	2.7	3.3	3.3	22	2.7		38	35.2		2K 5%	432 1%	150 1%	806 .25%	536 .25%	22.1K 1%				
625	2200	12	10	10	2.2	3.9	4.7	15	2.2		38	26.9		3.3K 5%	200 1%	200 1%	947 .25%	376 .25%	24.3K 1%				

SIZE E CODE IDENT NO 92739 1450319
SCALE NONE SHEET 3 OF 4

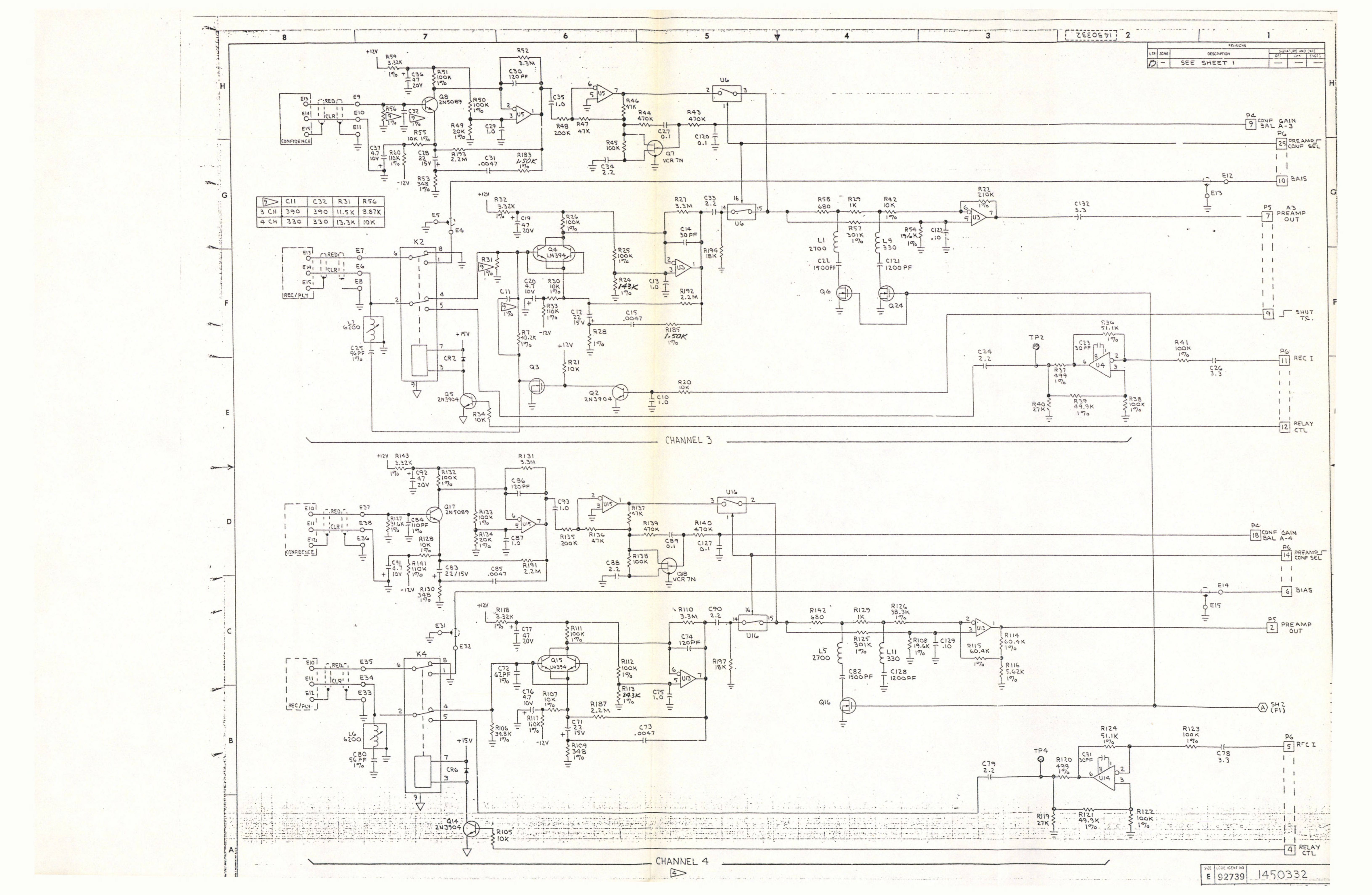


L.P. FILTER
A.G.C. AMP
SEE SHEET 1
DL2
ECHO ADDER
DL1
SELECTED P/B RF (FRONT)
RF DETECTOR
MONITOR R.F.
P/B RF LEVEL
RF METER ZERO
RF METER CALIB
FROM SH 1 SYNC RF LEVEL
FROM SH1 SYNC HD METER SELECT
RF LEVEL
D.G. CENTER
VARIABLE RF AMP
D.G. AMP
FROM SH 1 VIDEO TAPE/EE
FROM SH1 REF/VIDEO METER SELECT
REF/VIDEO METER DRIVE
VIDEO LEVEL DET.
VIDEO CALIB
EQUAL RANGE
AGC RF LEVEL
FROM SH 2
FROM SH 3
EQUAL CTL
COLOR / MONO
CHROMA MAN/AUTO
SYNC HD SWITCH
SHUTTLE / PLAY
UNITY
SYNC HD EQUAL (CTR DETENT)
SHUTTLE EQUAL
VIDEO D.G
(CTR DETENT)
DIF PHASE
ST. LINE FILTER
AST MOD DETECTOR
AST RF GAIN
AST DETECTED RF
E 92739 1450319
SCALE NONE
SHEET 4 OF 4
F04 OF 4

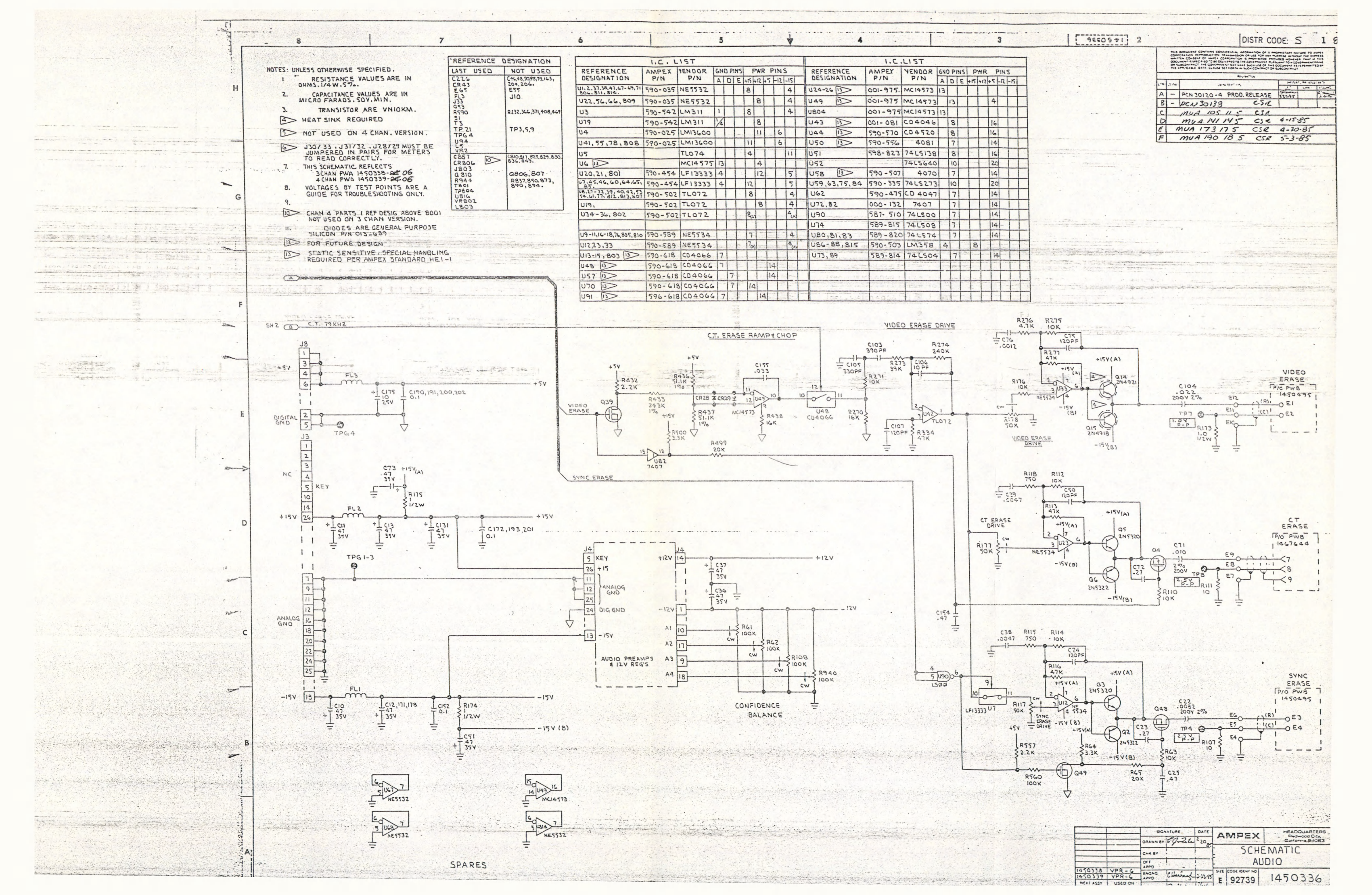

DISTR CODE: S-8 1
NOTES: UNLESS OTHERWISE SPECIFIED.
1. RESISTANCE VALUES ARE IN OHMS, 1/4W, 5%.
2. CAPACITANCE VALUES ARE IN MICROFARADS.
3. GROUND SYMBOLS ANALOG GND DIGITAL GND
4. AUDIO 4 COMPONENTS ARE NOT USED ON PWA 1450334
5. SCHEMATIC REFLECTS: PWA 1450334-04 (3-CHANNEL) PWA 1450335-04 (4-CHANNEL)
6. TRANSISTORS ARE VN10KM.
7. INDUCTORS ARE IN MICROHENRIES, 5%.
8. DIODES ARE GENERAL PURPOSE, SILICON, SWITCHING DIODES P/N 013-689.
9. TABLE (SH3) SHOWS VALUE DIFFERENCES BETWEEN 3-CHANNEL AND 4-CHANNEL PREAMPS.
I.C. LIST
REF DES | AMPEX P/N | VENDOR P/N | PIN +15V | PIN +12V | PIN -15V | PIN -12V | DIG GND
U1 | 590-035 | NE5532 | 8 | | 4
U3,9,13,18 | 590-035 | NE5532 | | 8 | | 4
U2,4,10,14,19 | 590-617 | LM318 | 7 | | 4
U6,16 | 590-454 | LF13333 | 12 | | 5 | | 4
U8 | 590-589 | NE5534 | | 7 | | 4
U11 | 589-527 | LM317T | 3
U12 | 590-808 | LM337T | | | | 2
U5,7,15,17 | 590-502 | TL072 | | 8 | | 4
REVISIONS
A — PCN 30120-1 PROD RELEASE
B MUA 087 09 5B CSR
C MUA 091 09 5B CSR
D MUA 137 14 5 B CSR 4-15-85
K1
TP1
REC/PLY
RED
CLR
CONFIDENCE
Q1 LM394
U1
U2
U8
U11
U12
CR1
CR4 013-678
CR5 013-678
Q25
REC ACTIVE
L13 1200
P5 16 CT PREAMP
8 CT. REC I
P4 23 C.T. BIAS
P6 13 CT RELAY CTL
P5 15 CT CONFIDENCE
TPG-D
P4 24 DIG GND
5 KEY
14 +12V OUT
26 +15V
29 11 12 ANALOG GND
13 -15V
1 -12V OUT
TPG-A
+12V
-12V
-15V
REFERENCE DESIGNATION
LAST USED | NOT USED
C133 | C14
CR5
E52
K5
L13
Q27
R197 | R23,35
TP9
TPG(A) c(D)
U19
1450335 VPR-6
1450334 VPR-6
NEXT ASSY | USED ON
AMPEX
HEADQUARTERS Redwood City, California 94063
SCHEMATIC AUDIO PREAMP
SIZE E CODE IDENT NO 92739 1450332



CHANNEL 1
CHANNEL 2
CONFIDENCE
REC/PLY
SEE SHEET 1
CONF GAIN BAL A1
PREAMP CONF SEL
BIAS
PREAMP OUT
REC ACTIVE
REC I
RELAY CTL
CONF GAIN BAL A-2
E 92739 1450332



	C11	C32	R31	R56
3 CH	390	390	11.5K	8.87K
4 CH	330	330	13.3K	10K



REFERENCE DESIGNATION LAST USED	NOT USED
C226, CR43, E65, FL3, J33, Q53, R590, S1, T3, TP21, TPG4, U94, L5, VR2	C46,48,90,98,99,163,204,206. E55 J10. R232,366,371,408,469 TP3,5,9
C857, CR806, J803, Q810, R944, T801, TP804, U816, VR802, L803 (10)	C810,817,825,829,830,836,849. Q806,807 R837,850,873,890,894.

I.C. LIST

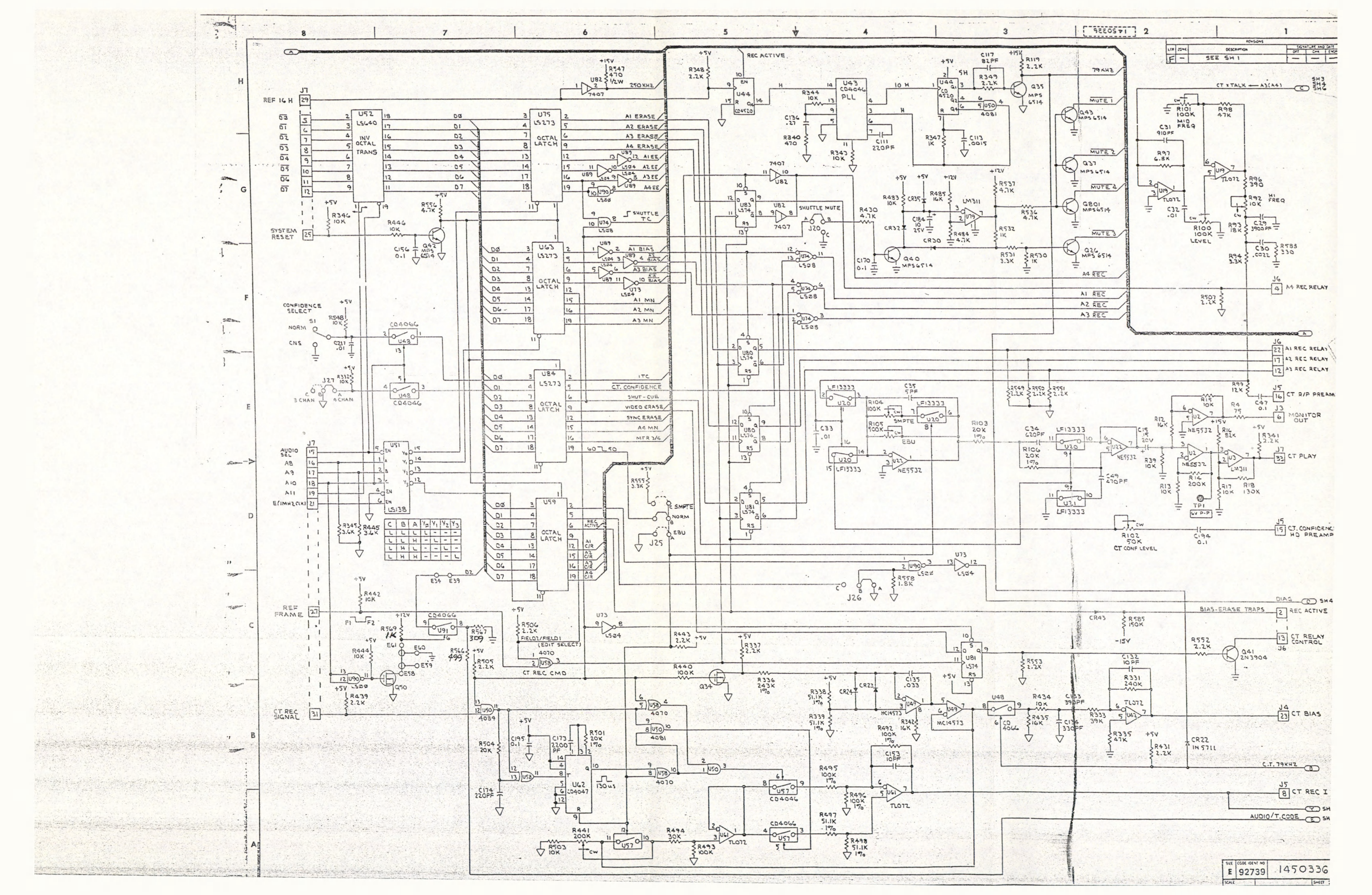
REFERENCE DESIGNATION	AMPEX P/N	VENDOR P/N	GND A	GND D	GND E	PWR +15	PWR +12	PWR +5	PWR -12	PWR -15	
U1,2,37,38,41,67-69,71 806,811,814.	590-035	NE5532				8				4	
U22,56,66,809	590-035	NE5532					8			4	
U3	590-542	LM311	1			8				4	
U19	590-542	LM311	1/4				8				
U4	590-025	LM13600					11		6		
U41,55,78,808	590-025	LM13600				11			6		
U5		TL074				4				11	
U6 (13)		MC14575	13				4				
U20,21,801	590-454	LF13333	4				12			5	
U7,45,46,60,64,65,85.	590-454	LF13333	4			12				5	
U8,27-32,39,40,42,53,54,61,77,812,813,807	590-502	TL072				8				4	
U19,	590-502	TL072					8			4	
U34-36,802	590-502	TL072				8(A)				4(A)	
U9-11,16-18,76,805,810	590-589	NE5534				7				4	
U12,23,33	590-589	NE5534				7(A)				4(A)	
U13-15,803 (13)	590-618	CD4066	7								
U48 (13)	590-618	CD4066	7					14			
U57 (13)	590-618	CD4066		7				14			
U70 (13)	590-618	CD4066		7		14					
U91 (13)	596-618	CD4066	7				14				

I.C. LIST

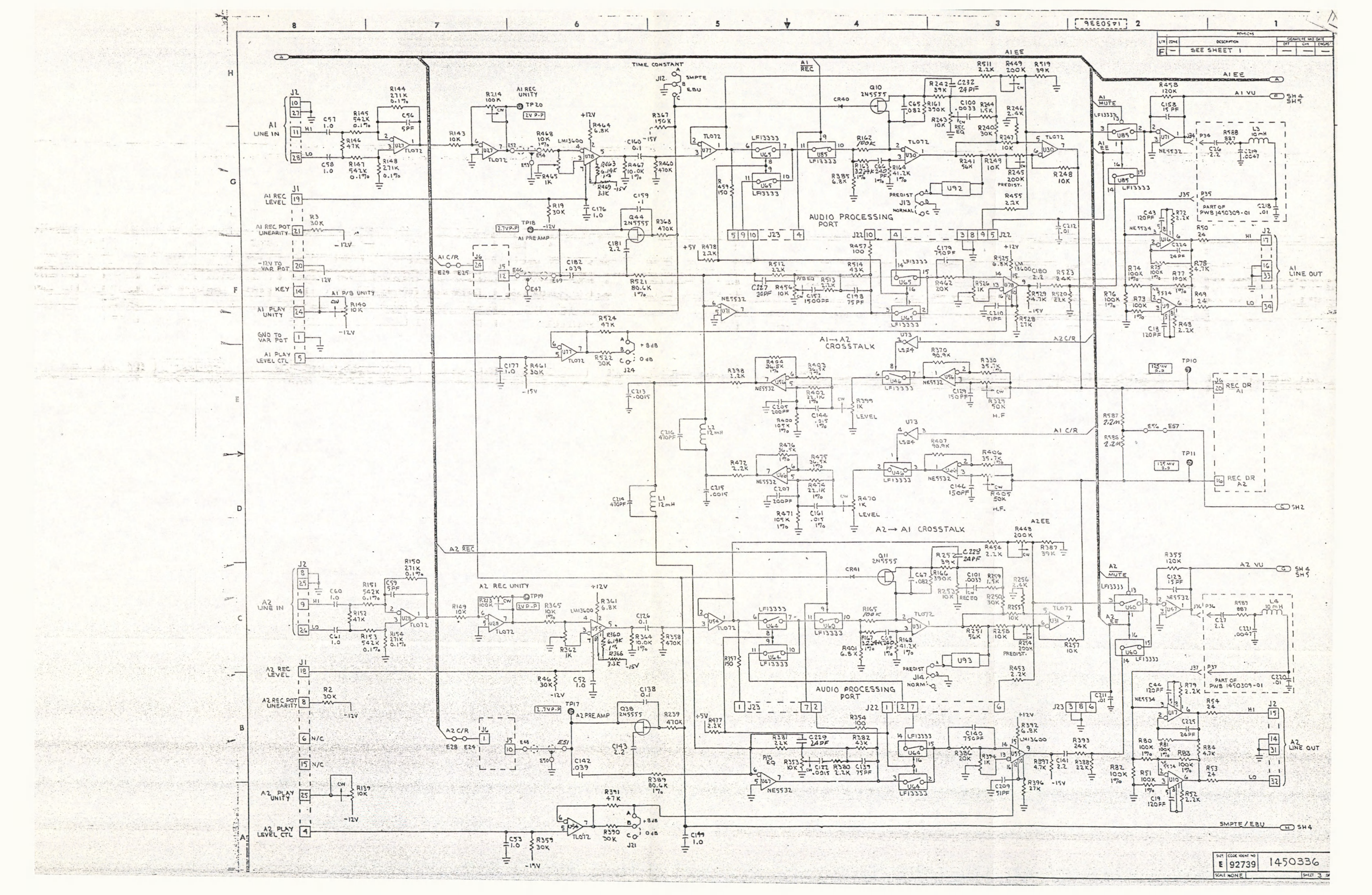
REFERENCE DESIGNATION	AMPEX P/N	VENDOR P/N	GND A	GND D	GND E	PWR +15	PWR +12	PWR +5	PWR -12	PWR -15	
U24-26 (13)	001-975.	MC14573	13								
U49 (13)	001-975	MC14573		13				4			
U804	001-975	MC14573	13								
U43 (13)	001-081	CD4046		8				16			
U44 (13)	590-570	CD4520		8				16			
U50 (13)	590-556	4081		7				14			
U51	598-823	74LS138		8				16			
U52		74LS640		10				20			
U58 (13)	590-507	4070		7				14			
U59,63,75,84	590-335	74LS273		10				20			
U62	590-475	CD 4047		7				14			
U72,82	000-132	7407		7				14			
U90	587-510	74LS00		7				14			
U74	589-815	74LS08		7				14			
U80,81,83	589-820	74LS74		7				14			
U86-88,815	590-503	LM358	4				8				
U73,89	589-814	74LS04		7				14			

REVISIONS

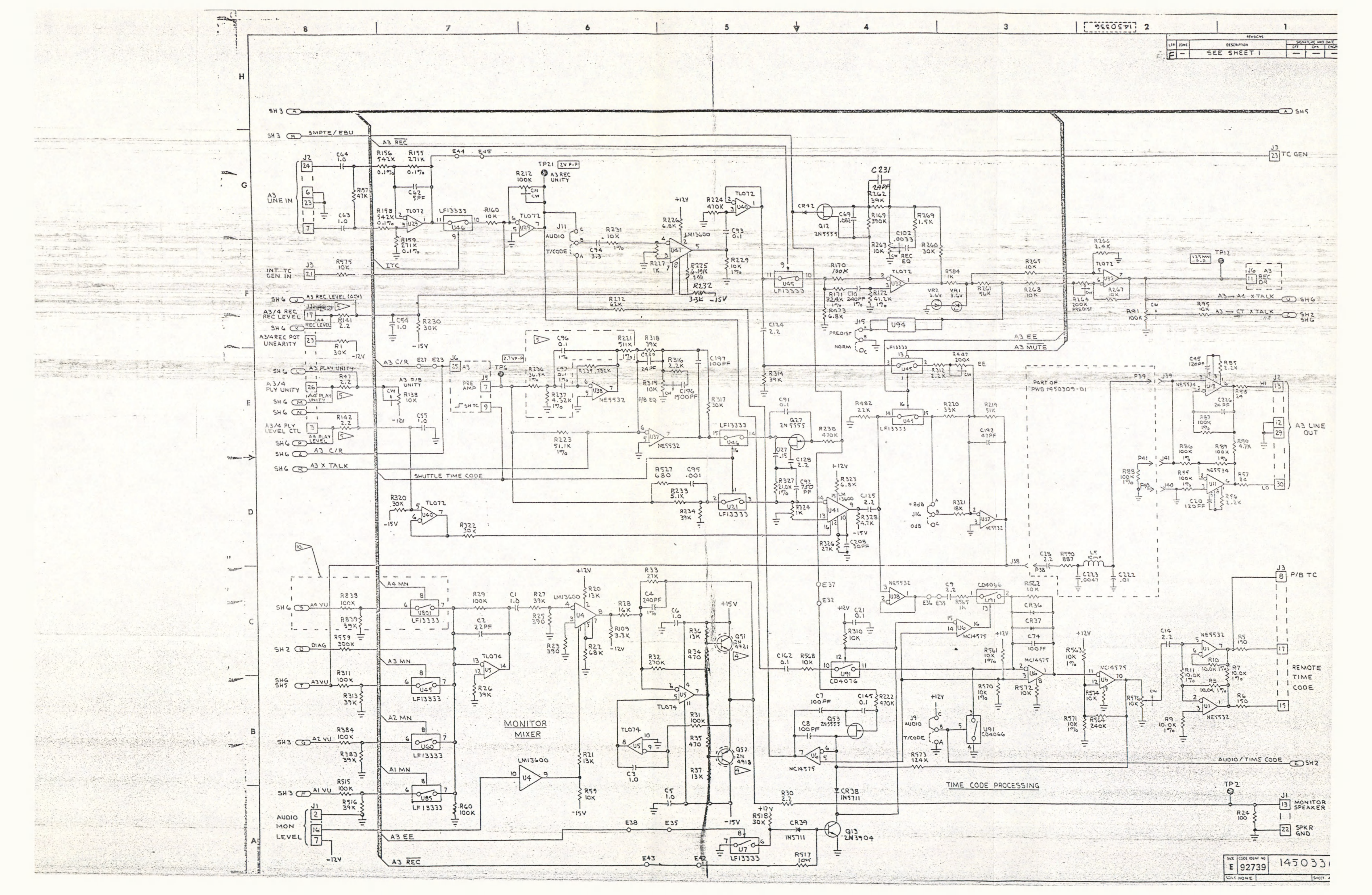
LTR		DESCRIPTION		
A	–	PCN 30120-4 PROD. RELEASE		
B	–	PCN 30133	CSR	
C		MUA 105 11 5	CSR	
D		MUA 141 14 5	CSR	4-15-85
E		MUA 173 17 5	CSR	4-30-85
F		MUA 190 18 5	CSR	5-3-85



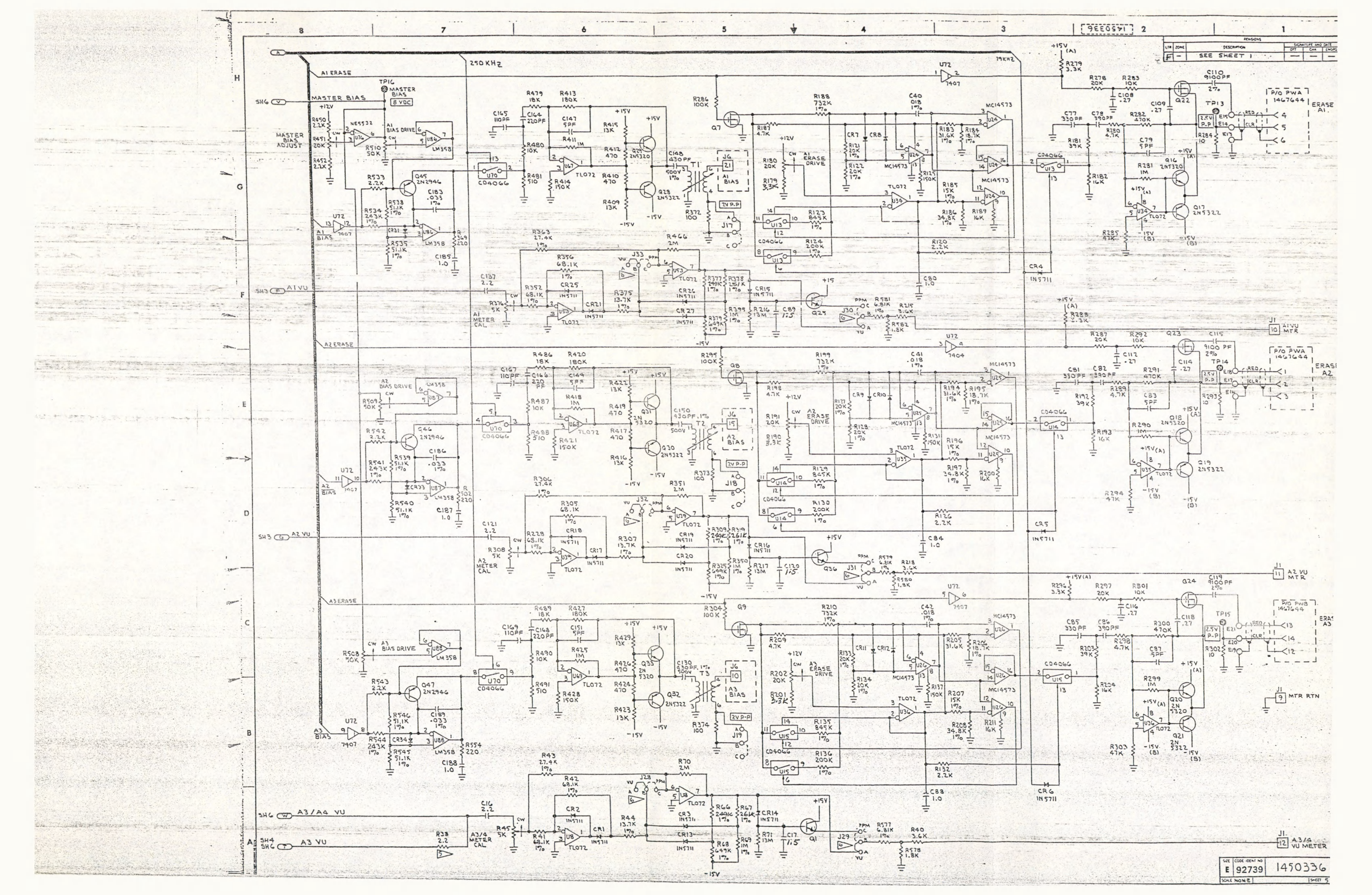
SIZE	CODE IDENT NO	
E	92739	1450336



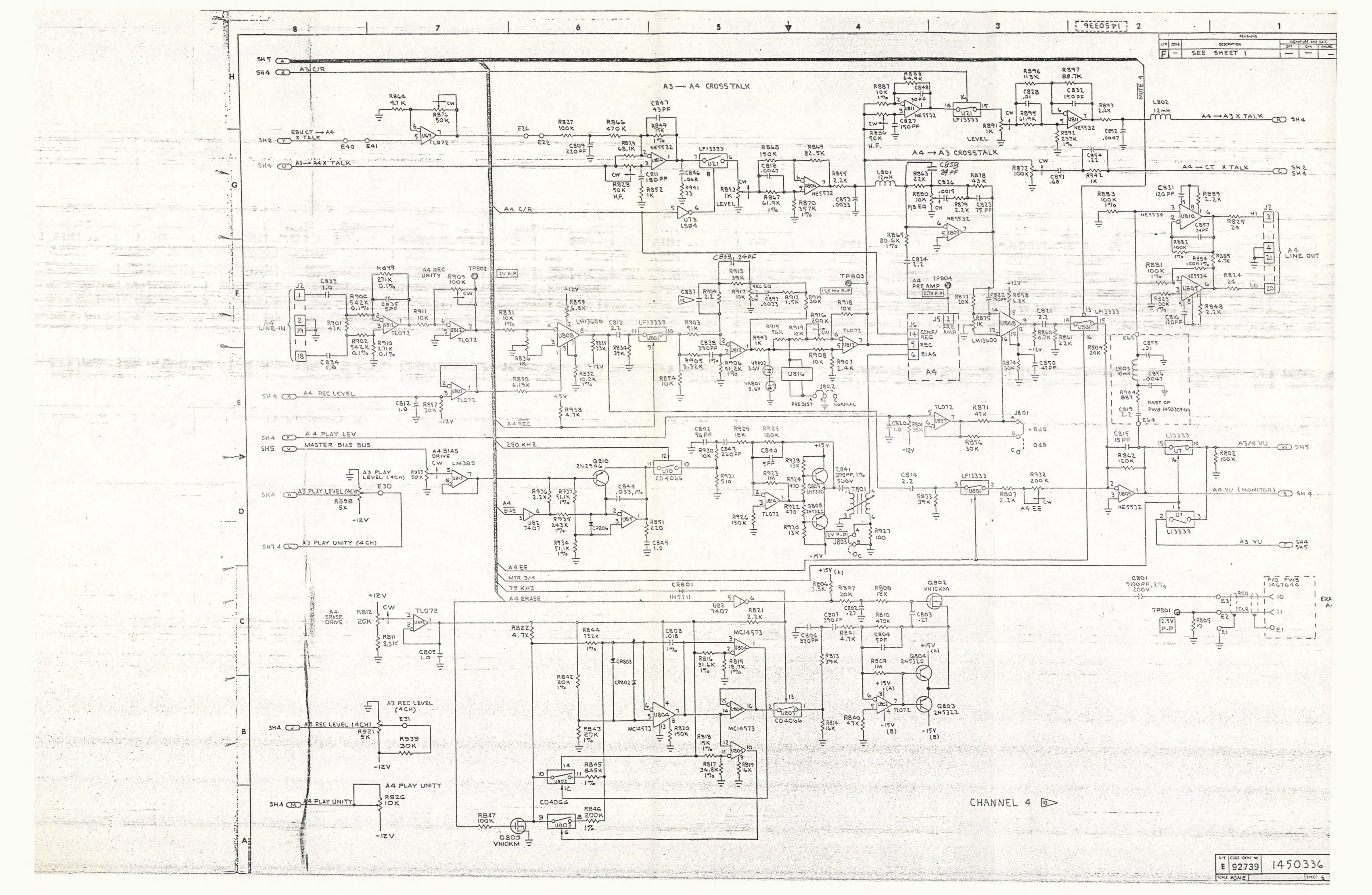
TIME CONSTANT
SMPTE
EBU
A1 REC
A1 EE
A1 VU
SH4 SH5
A1 LINE IN
A1 REC UNITY
A1 REC LEVEL
A1 REC POT LINEARITY
-12V TO VAR POT
KEY
A1 PLAY UNITY
GND TO VAR POT
A1 PLAY LEVEL CTL
A1 PREAMP
A1 C/R
A1 P/B UNITY
AUDIO PROCESSING PORT
PART OF PWB 1450309-01
A1 LINE OUT
A1→A2 CROSSTALK
A2→A1 CROSSTALK
LEVEL
H.F.
REC DR A1
REC DR A2
A2 C/R
A1 C/R
SH2
A2 REC
A2 EE
A2 VU
SH4 SH5
A2 LINE IN
A2 REC UNITY
A2 REC LEVEL
A2 REC POT LINEARITY
A2 PREAMP
A2 PLAY UNITY
A2 PLAY LEVEL CTL
A2 LINE OUT
A2 MUTE
SMPTE/EBU
SH4
SEE SHEET 1
9EE0571
E 92739 1450336
SCALE NONE
SHEET 3



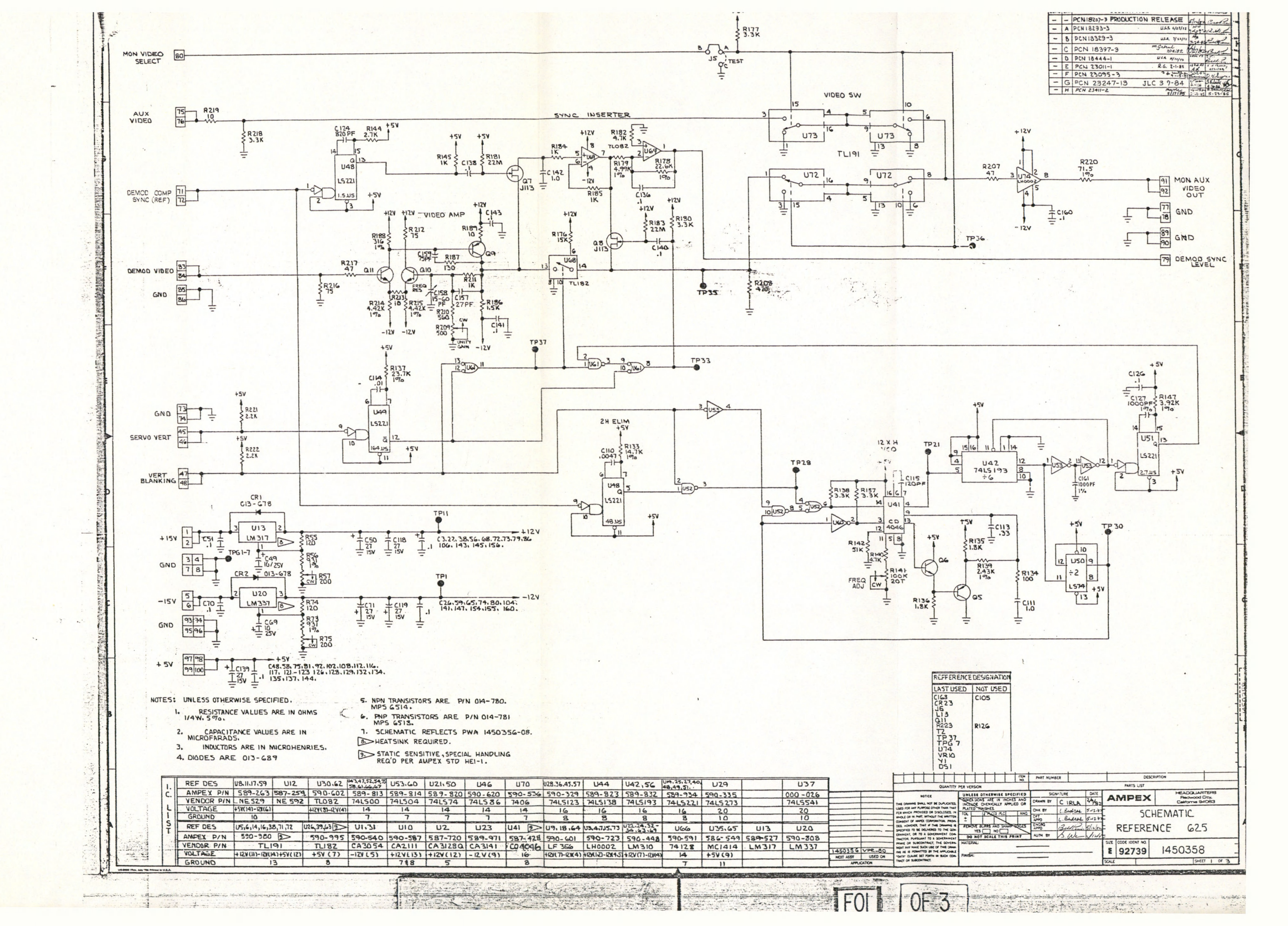
SEE SHEET 1
SMPTE/EBU
A3 REC
A3 LINE IN
INT. TC GEN IN
A3 REC LEVEL (4.5V)
A3/4 REC REC LEVEL
A3/4 REC POT LINEARITY
A3 PLAY UNITY
A3/4 PLY UNITY
A3/4 PLY LEVEL CTL
A3 C/R
A3 X TALK
SHUTTLE TIME CODE
AUDIO
T/CODE
A3 REC UNITY
REC EQ
PREDIST
NORM
A3 EE
A3 MUTE
A3 → A4 X TALK
A3 → CT X TALK
TC GEN
A3 REC DR
PART OF PWB 1450309-01
A3 LINE OUT
P/B TC
REMOTE TIME CODE
AUDIO/TIME CODE
MONITOR SPEAKER
SPKR GND
A4 MN
A3 MN
A2 MN
A1 MN
A4 VU
A3 VU
A2 VU
A1 VU
DIAG
MONITOR MIXER
TIME CODE PROCESSING
AUDIO MON LEVEL
A3 EE
A3 REC
92739
145033



8
7
6
5
4
3
2
1
1450336
REVISIONS
LTR
ZONE
DESCRIPTION
F
SEE SHEET 1
250 KHz
19 KHz
A1 ERASE
MASTER BIAS
TP16
MASTER BIAS
8 VDC
SH6 V
MASTER BIAS ADJUST
NE5532
A1 BIAS DRIVE
LM358
CD4066
TLO72
A1 BIAS
2V P-P
J17
A1 BIAS
7407
A1 ERASE DRIVE
MC14573
2N5320
2N5322
IN5711
P/O PWA 1467644
ERASE A1
TP13
2.5V P-P
SH3 F A1 VU
A1 METER CAL
J33
J30
PPM
VU
J1
10
A1 VU MTR
A2 ERASE
7404
P/O PWA 1467644
ERASE A2
TP14
A2 BIAS DRIVE
A2 BIAS
A2 ERASE DRIVE
J18
J32
J31
SH3 G A2 VU
A2 METER CAL
J1
11
A2 VU MTR
A3 ERASE
P/O PWB 1467644
ERASE A3
TP15
A3 BIAS DRIVE
A3 BIAS
A3 ERASE DRIVE
J19
J1
9
MTR RTN
J28
J29
SH6 W A3/A4 VU
SH4 SH6 T A3 VU
A3/4 METER CAL
J1
12
A3/4 VU METER
E 92739 1450336
SCALE NONE
SHEET 5



SEE SHEET 1
A3 → A4 CROSSTALK
A4 → A3 CROSSTALK
A4 → A3 X TALK
A4 → CT X TALK
A3 C/R
A4 C/R
EBU CT → A4 X TALK
A3 → A4 X TALK
A4 LINE IN
A4 LINE OUT
A4 REC UNITY
A4 REC LEVEL
A4 REC
A 4 PLAY LEV
MASTER BIAS BUS
250 KHZ
A4 BIAS DRIVE
A3 PLAY LEVEL (4CH)
A3 PLAY UNITY (4 CH)
A4 EE
MTR 3/4
79 KHZ
A4 ERASE
A4 ERASE DRIVE
A3 REC LEVEL (4CH)
A4 PLAY UNITY
A4 PREAMP
PREDIST
NORMAL
PART OF PWB 1450309-01
A3/4 VU
A4 VU (MONITOR)
A3 VU
CHANNEL 4
92739
1450336



–	–	PCN18207-3 PRODUCTION RELEASE		
–	A	PCN18293-3 U.S.A. 6/28/82		
–	B	PCN18329-3 U.S.A. 7/23/82	7-24-82	
–	C	PCN 18397-3 M.Gabriel 9/14/82		
–	D	PCN 18444-1 U.S.A. 11/10/82		
–	E	PCN 23011-1 R.G. 2-1-83		
–	F	PCN 23095-3 9-15-83		D. O'Leary
–	G	PCN 23247-13 JLC 3 7-84		
–	H	PCN 23411-2 5/17/85	5-22-85	5-23-85

I.C. LIST

REF DES	U8.11.17.59	U12	U30.62	U43,47,52,54,55 58,61,66,67	U53.60	U21.50	U46	U70	U28.36.45.57	U44	U42,56	U19,25,27,40, 48,49,51.	U29		U37
AMPEX P/N	589-263	587-254	590-602	589-813	589-814	589-820	590-620	590-536	590-329	589-823	589-832	589-934	590-335		000-026
VENDOR P/N	NE529	NE592	TL082	74LS00	74LS04	74LS74	74LS86	7406	74LS123	74LS138	74LS193	74LS221	74LS273		74LS541
VOLTAGE	+5V(14)-12V(6)		+12V(8)-12V(4)	14	14	14	14	14	16	16	16	16	20		20
GROUND	10			7	7	7	7	7	8	8	8	8	10		10

REF DES	U5,6,14,16,38,71,72	U26,39,63 9	U1.31	U10	U2	U23	U41 9	U9.18.64	U3,4,7,15,73	U22,24,32-34,63,69	U66	U35.65	U13	U20
AMPEX P/N	590-980 8	590-995	590-540	590-587	587-720	589-971	587-428	590-601	590-723	590-448	590-591	586-549	589-527	590-808
VENDOR P/N	TL191	TL182	CA3054	CA2111	CA3128Q	CA3141	CD4046	LF356	LH0002	LM310	74128	MC1414	LM317	LM337
VOLTAGE	+12V(11)-12V(14)+5V(12)	+5V (7)	-12V (5)	+12V(13)	+12V(12)	-12V(9)	16	+12V(7)-12V(4)	+12V(12)-12V(4,5)	+12V(7)-12V(4)	14	+5V(9)		
GROUND	13	8		7&8	5		8				7	11		

REFERENCE DESIGNATION	
LAST USED	NOT USED
C163 CR23 J6 L13 Q11 R223 T2 TP37 TPG 7 U74 VR10 Y1 DS1	C105 R126

1450356 VPR-80
NEXT ASSY USED ON
APPLICATION

QUANTITY PER VERSION | ITEM NO. | PART NUMBER | DESCRIPTION
PARTS LIST

NOTICE
THIS DRAWING SHALL NOT BE DUPLICATED, USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH PROVIDED OR DISCLOSED, IN WHOLE OR IN PART, WITHOUT THE WRITTEN CONSENT OF AMPEX CORPORATION, PROVIDED, HOWEVER, THAT IF THIS DRAWING IS SPECIFIED TO BE DELIVERED TO THE GOVERNMENT, OR TO A GOVERNMENT CONTRACTOR, PURSUANT TO A GOVERNMENT PRIME OR SUBCONTRACT, THE GOVERNMENT MAY MAKE SUCH USE OF THIS DRAWING AS IS PERMITTED BY THE APPLICABLE "DATA" CLAUSE SET FORTH IN SUCH CONTRACT OR SUBCONTRACT.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES.
TOL ± | 2 PLC | 3 PLC | ANG
REMOVE BURRS AND SHARP EDGES YES ☐ NO ☐
DO NOT SCALE THIS PRINT
MATERIAL:
FINISH:

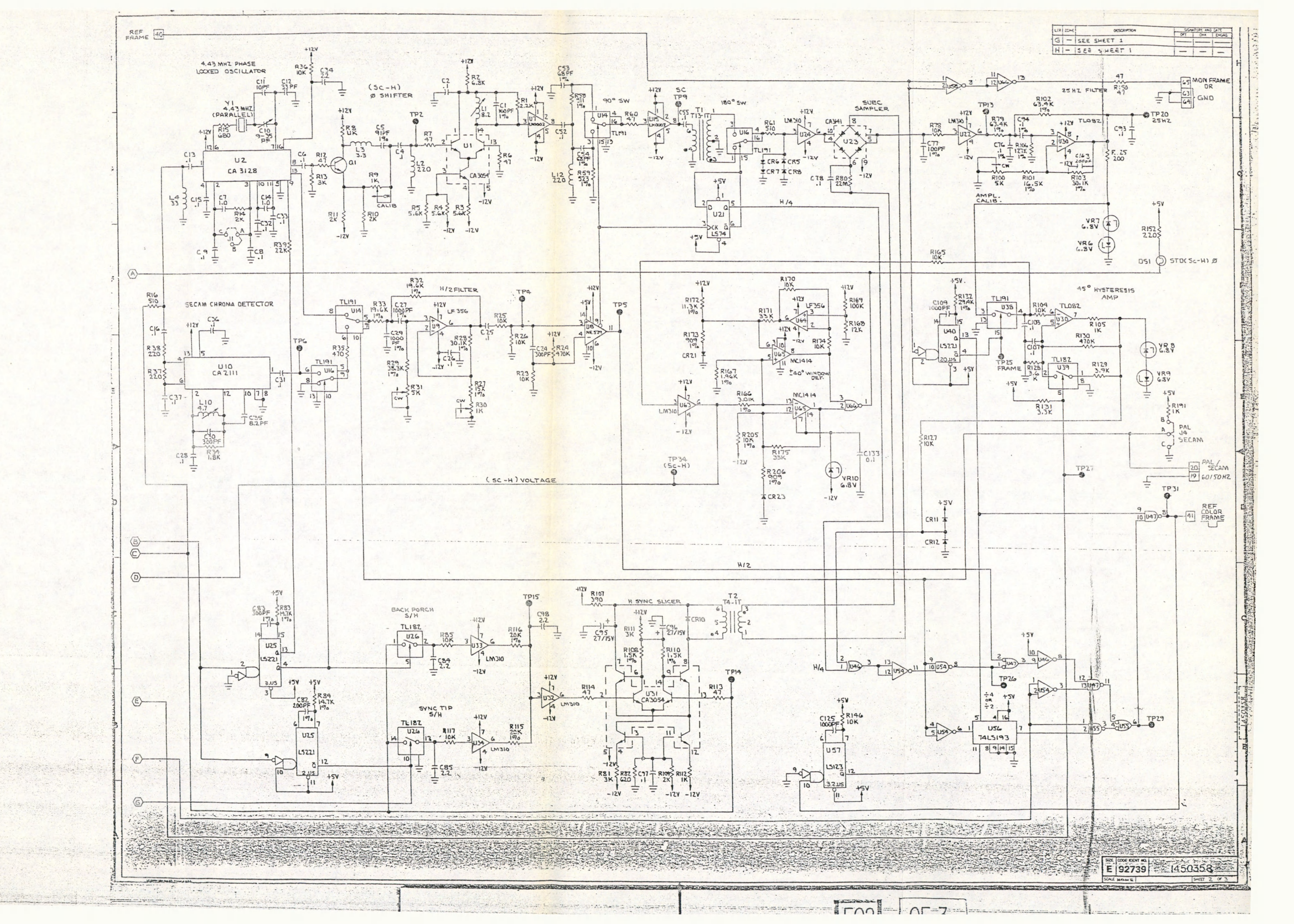
SIGNATURE		DATE
DRAWN BY	C IRLA	2/6/82
CHK BY	L. Badras	5-12-82
DFT APPD	L. Badras	5-12-82
ENGRG APPD		5/12/82
AUTH BY		

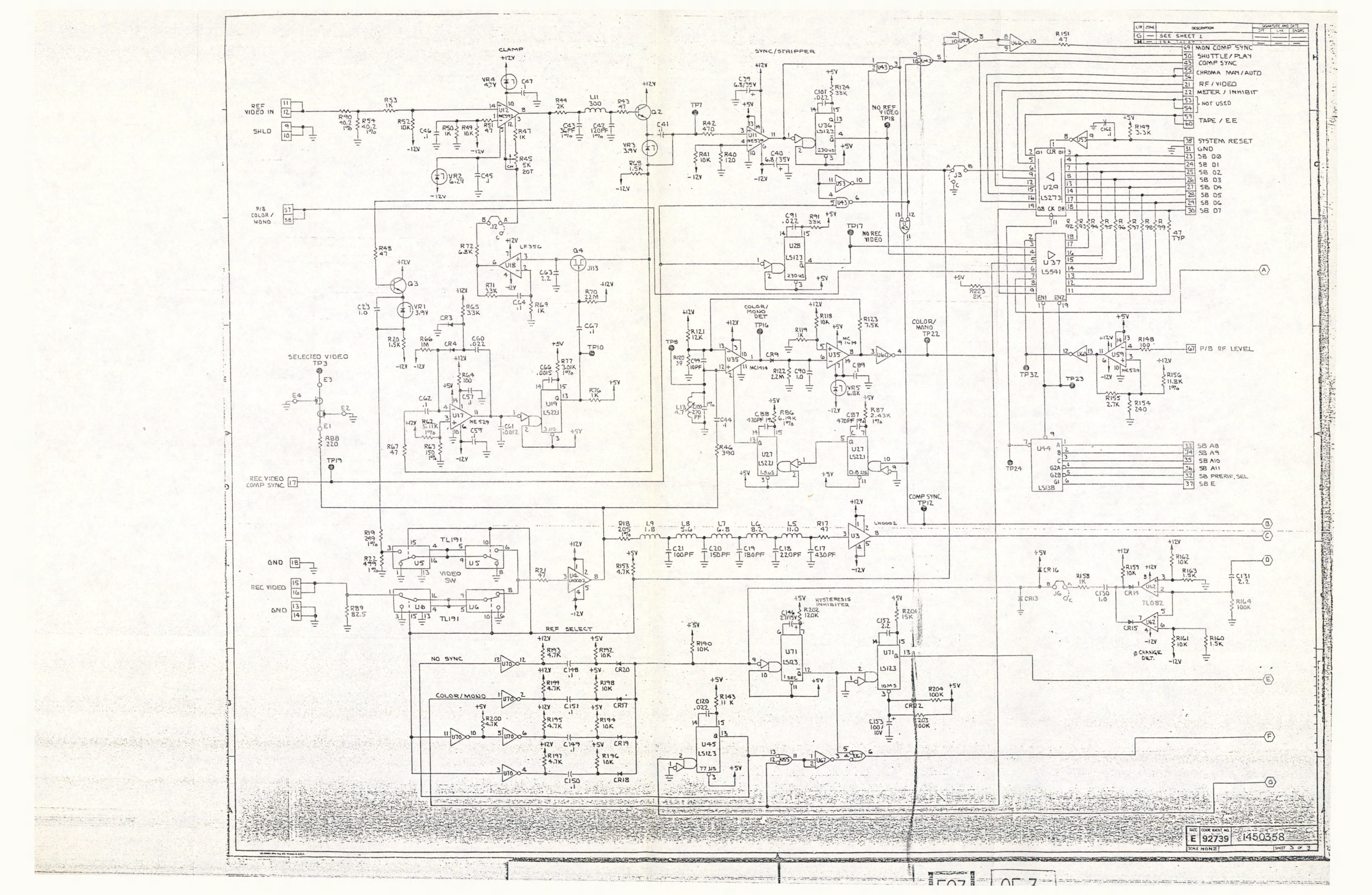
AMPEX — HEADQUARTERS Redwood City, California 94063

SCHEMATIC REFERENCE 625

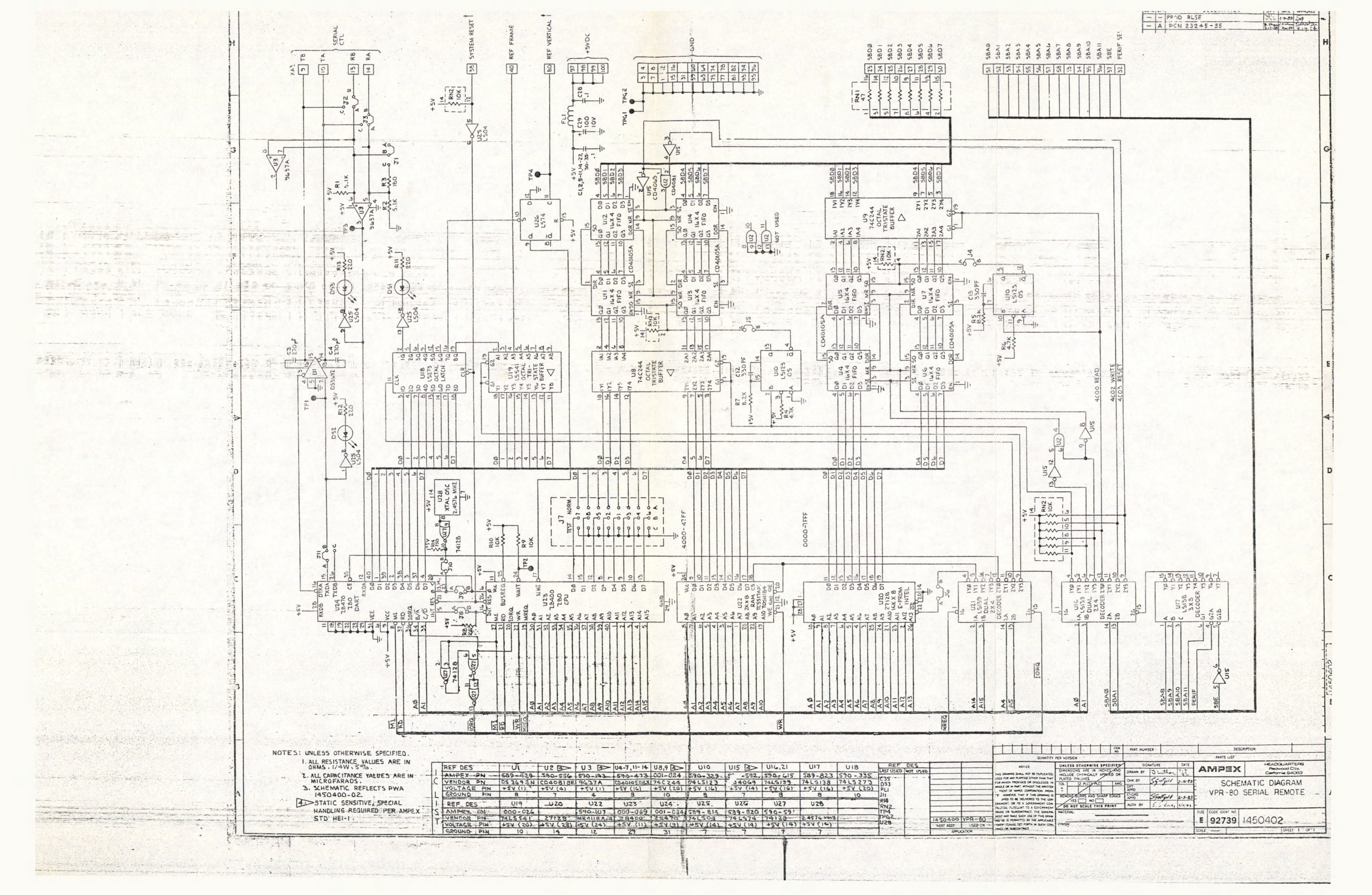
SIZE E | CODE IDENT NO. 92739 | 1450358
SCALE | SHEET 1 OF 3

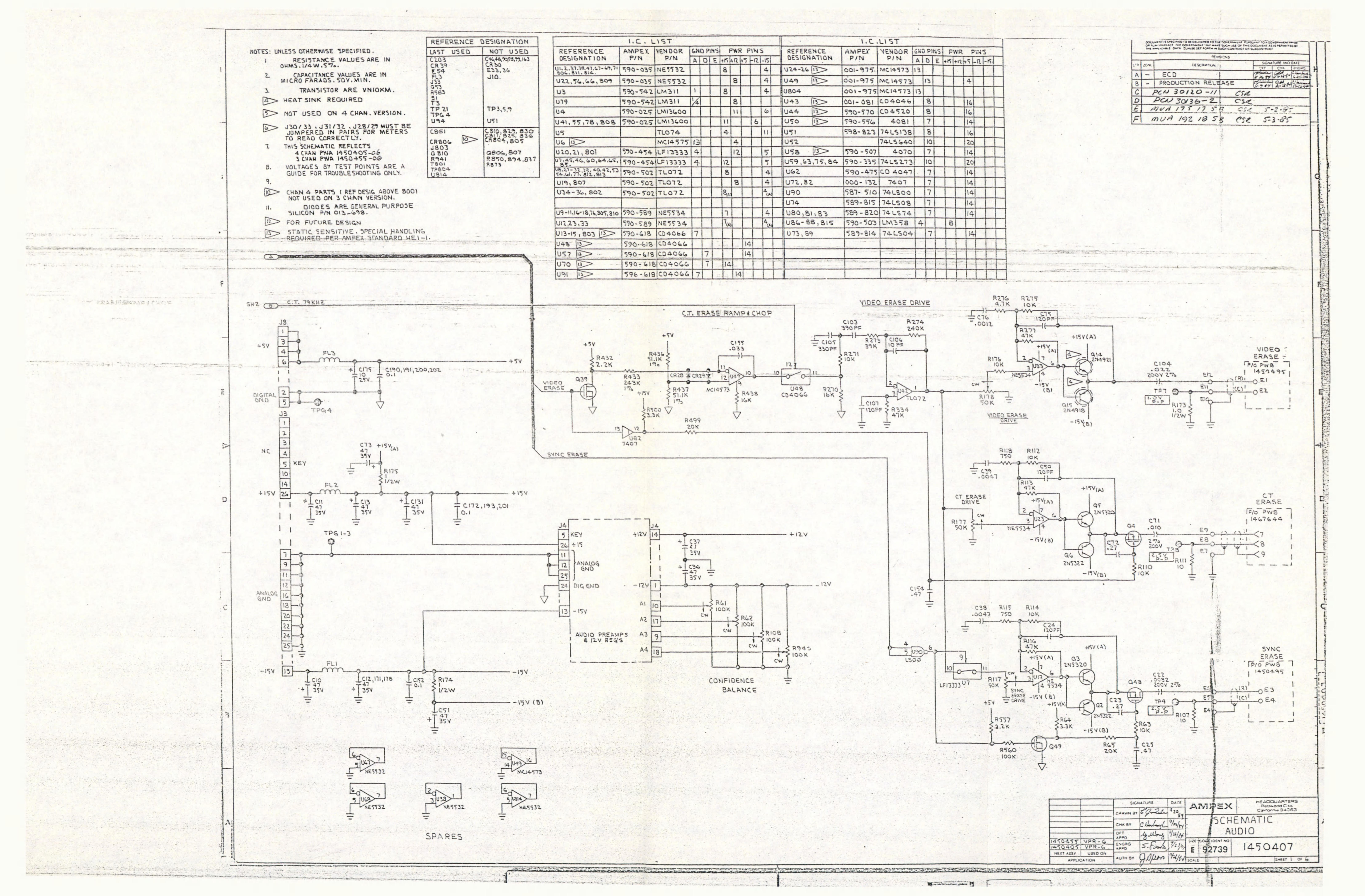
F01 OF 3


4.43 MHZ PHASE LOCKED OSCILLATOR
(SC-H) Ø SHIFTER
90° SW
180° SW
SUBC SAMPLER
25HZ FILTER
MON FRAME OR
GND
SECAM CHROMA DETECTOR
H/2 FILTER
45° HYSTERESIS AMP
±40° WINDOW DET.
(SC-H) VOLTAGE
BACK PORCH S/H
SYNC TIP S/H
H SYNC SLICER
REF COLOR FRAME
PAL/SECAM
60/50HZ
REF FRAME
SEE SHEET 1
E 92739 1450358



CLAMP
SYNC/STRIPPER
REF VIDEO IN
SHLD
P/B COLOR/MONO
SELECTED VIDEO TP3
REC VIDEO COMP SYNC
GND
REC VIDEO
VIDEO SW
TL191
REF SELECT
NO SYNC
COLOR/MONO
HYSTERESIS INHIBITER
NO REF VIDEO TP18
NO REC VIDEO
COLOR/MONO DET
COLOR/MONO TP22
COMP SYNC TP12
MON COMP SYNC
SHUTTLE/PLAY
COMP SYNC
CHROMA MAN/AUTO
RF/VIDEO
METER/INHIBIT
NOT USED
TAPE/EE
SYSTEM RESET
GND
SB D0
SB D1
SB D2
SB D3
SB D4
SB D5
SB D6
SB D7
P/B RF LEVEL
SB A8
SB A9
SB A10
SB A11
SB PRERIF SEL
SB E
Ø CHANGE DET.
SEE SHEET 1
E 92739 1450358
SCALE NONE
SHEET 3 OF 3


NOTES: UNLESS OTHERWISE SPECIFIED.
1. ALL RESISTANCE VALUES ARE IN OHMS, 1/4W, 5%.
2. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
3. SCHEMATIC REFLECTS PWA 1450400-02.
4. STATIC SENSITIVE, SPECIAL HANDLING REQUIRED PER AMPEX STD HEI-1.
IC LIST
REF DES
AMPEX PN
VENDOR PN
VOLTAGE PIN
GROUND PIN
AMPEX
HEADQUARTERS Redwood City, California 94063
SCHEMATIC DIAGRAM
VPR-80 SERIAL REMOTE
SIZE E
CODE IDENT NO. 92739
1450402
SHEET 1 OF 1
DO NOT SCALE THIS PRINT
SERIAL CTL
SYSTEM RESET
REF FRAME
REF VERTICAL
GND
U23 Z8400 Z80 CPU
U24 Z8470 Z80 DART
U22 2Kx8 RAM
U20 2712B 16Kx8 E-PROM INTEL
U19 74LS541 OCTAL TRI-STATE BUFFER
U18 LS273 OCTAL LATCH
U8 74C244 OCTAL TRISTATE BUFFER
U9 74C244 OCTAL TRISTATE BUFFER
U28 XTAL OSC 2.4576 MHZ
U21 LS139 DUAL 2X4 DECODER
U16 LS139 DUAL 2X4 DECODER
U17 LS138 3X8 DECODER
4000-47FF
0000-7FFF
4C00 READ
4C02 WRITE
4C03 RESET



NOTES: UNLESS OTHERWISE SPECIFIED.

1. RESISTANCE VALUES ARE IN OHMS. 1/4 W. 5%.
2. CAPACITANCE VALUES ARE IN MICRO FARADS. 50V. MIN.
3. TRANSISTOR ARE VN10KM.
4. HEAT SINK REQUIRED
5. NOT USED ON 4 CHAN. VERSION.
6. J30/33, J31/32, J28/29 MUST BE JUMPERED IN PAIRS FOR METERS TO READ CORRECTLY.
7. THIS SCHEMATIC REFLECTS
   4 CHAN PWA 1450405-06
   3 CHAN PWA 1450455-06
8. VOLTAGES BY TEST POINTS ARE A GUIDE FOR TROUBLESHOOTING ONLY.
9.
10. CHAN 4 PARTS (REF DESIG ABOVE 800) NOT USED ON 3 CHAN VERSION.
11. DIODES ARE GENERAL PURPOSE SILICON P/N 013-698.
12. FOR FUTURE DESIGN
13. STATIC SENSITIVE, SPECIAL HANDLING REQUIRED PER AMPEX STANDARD HE1-1.

REFERENCE DESIGNATION	
LAST USED	NOT USED
C203 CR39 E54 FL3 J33 Q53 R583 S1 T3 TP21 TPG4 U94	C46,48,90,98,99,163 CR30 E33,36 J10. TP3,5,9 U51
CB51 CR806 J803 Q810 R941 T801 TP804 U814	(10) C810,829,830 C817,825,836 CR804,805 Q806,807 R850,894,837 R873

I.C. LIST

REFERENCE DESIGNATION	AMPEX P/N	VENDOR P/N	GND PINS A	GND PINS D	GND PINS E	PWR PINS +15	PWR PINS +12	PWR PINS +5	PWR PINS -12	PWR PINS -15
U1,2,37,38,47,67-69,71 806,811,814.	590-035	NE5532				8				4
U22,56,66,809	590-035	NE5532					8			4
U3	590-542	LM311	1			8				4
U19	590-542	LM311	1/4				8			
U4	590-025	LM13600					11			6
U41,55,78,808	590-025	LM13600				11			6	
U5		TL074				4				11
U6 (13)		MC14575	13				4			
U20,21,801	590-454	LF13333	4				12			5
U7,45,46,60,64,65, 85.	590-454	LF13333	4			12				5
U8,27-32,39,40,42,53 54,61,77,812,813	590-502	TL072				8				4
U19,807	590-502	TL072					8			4
U34-36,802	590-502	TL072				8(A)				4(A)
U9-11,16-18,76,305,810	590-589	NE5534				7				4
U12,23,33	590-589	NE5534				7(A)				4(A)
U13-15,803 (13)	590-618	CD4066	7							
U48 (13)	590-618	CD4066						14		
U57 (13)	590-618	CD4066		7				14		
U70 (13)	590-618	CD4066		7		14				
U91 (13)	596-618	CD4066	7				14			

I.C. LIST

REFERENCE DESIGNATION	AMPEX P/N	VENDOR P/N	GND PINS A	GND PINS D	GND PINS E	PWR PINS +15	PWR PINS +12	PWR PINS +5	PWR PINS -12	PWR PINS -15
U24-26 (13)	001-975.	MC14573	13							
U49 (13)	001-975	MC14573		13				4		
U804	001-975	MC14573	13							
U43 (13)	001-081	CD4046		8				16		
U44 (13)	590-570	CD4520		8				16		
U50 (13)	590-556	4081		7				14		
U51	598-823	74LS138		8				16		
U52		74LS640		10				20		
U58 (13)	590-507	4070		7				14		
U59,63,75,84	590-335	74LS273		10				20		
U62	590-475	CD 4047		7				14		
U72,82	000-132	7407		7				14		
U90	587-510	74LS00		7				14		
U74	589-815	74LS08		7				14		
U80,81,83	589-820	74LS74		7				14		
U86-88,815	590-503	LM358	4			8				
U73,89	589-814	74LS04		7				14		

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REVISIONS

LTR	ZONE	DESCRIPTION	SIGNATURE AND DATE		
			DFT	CHK	ENGRG
A	–	ECD	5-16-84	11-26-84	6-25-84
B	–	PRODUCTION RELEASE	11-2-84	11-26-84	11-26-84
C		PCN 30120-11 CSR			
D		PCN 30136-2 CSR			
E		MUA 175 17 5B CSR 5-2-85			
F		MUA 192 18 5B CSR 5-3-85			

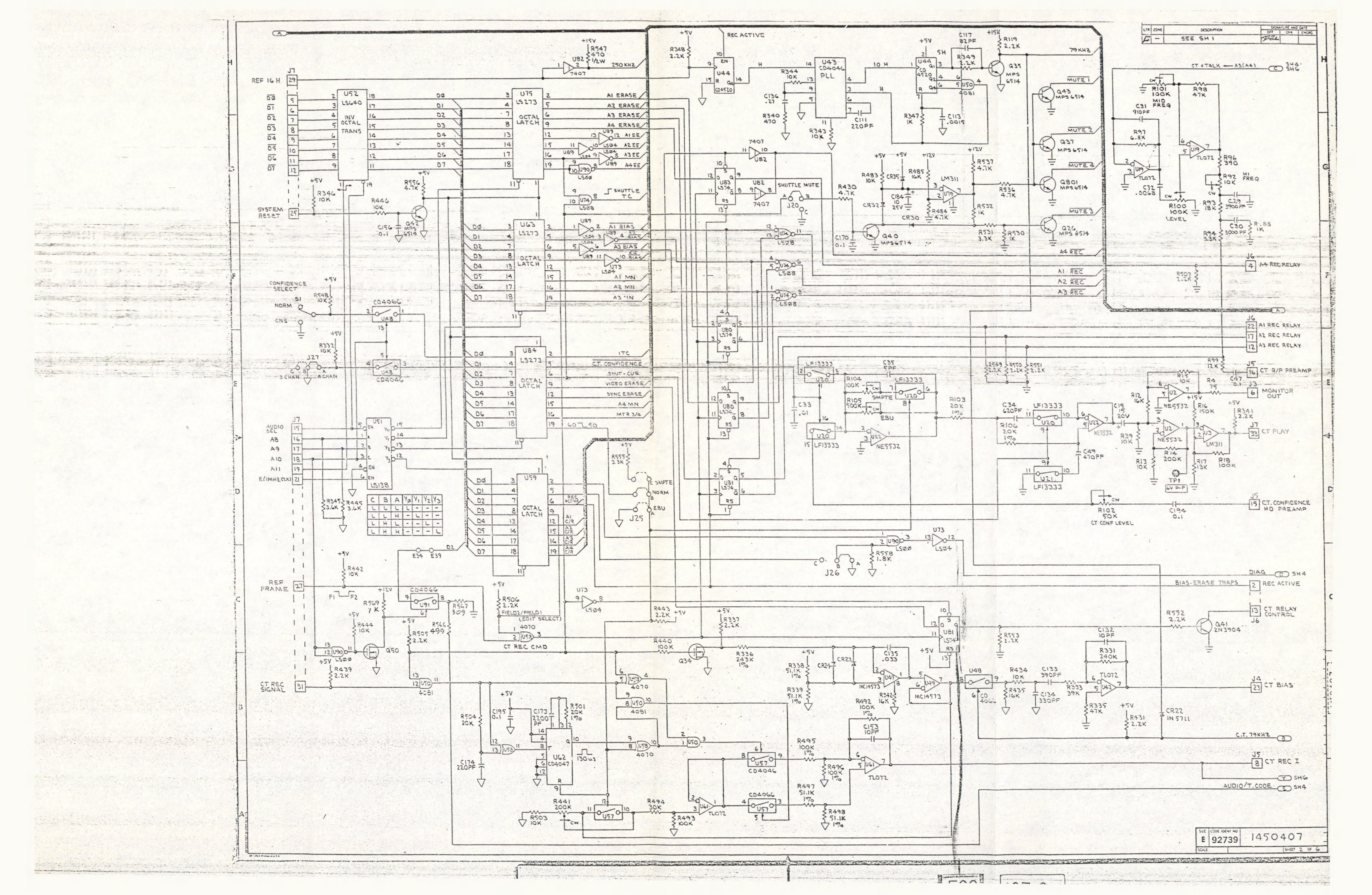
NEXT ASSY	USED ON		SIGNATURE	DATE
1450455	VPR-6	DRAWN BY		4/20/84
1450405	VPR-6	CHK BY	C. Harland	9/23/84
APPLICATION		DFT APPD	G. Wong	11/26/84
		ENGRG APPD	S. Fowler	9/27/84
		AUTH BY	J. Olson	11/26/84

AMPEX HEADQUARTERS Redwood City, California 94063

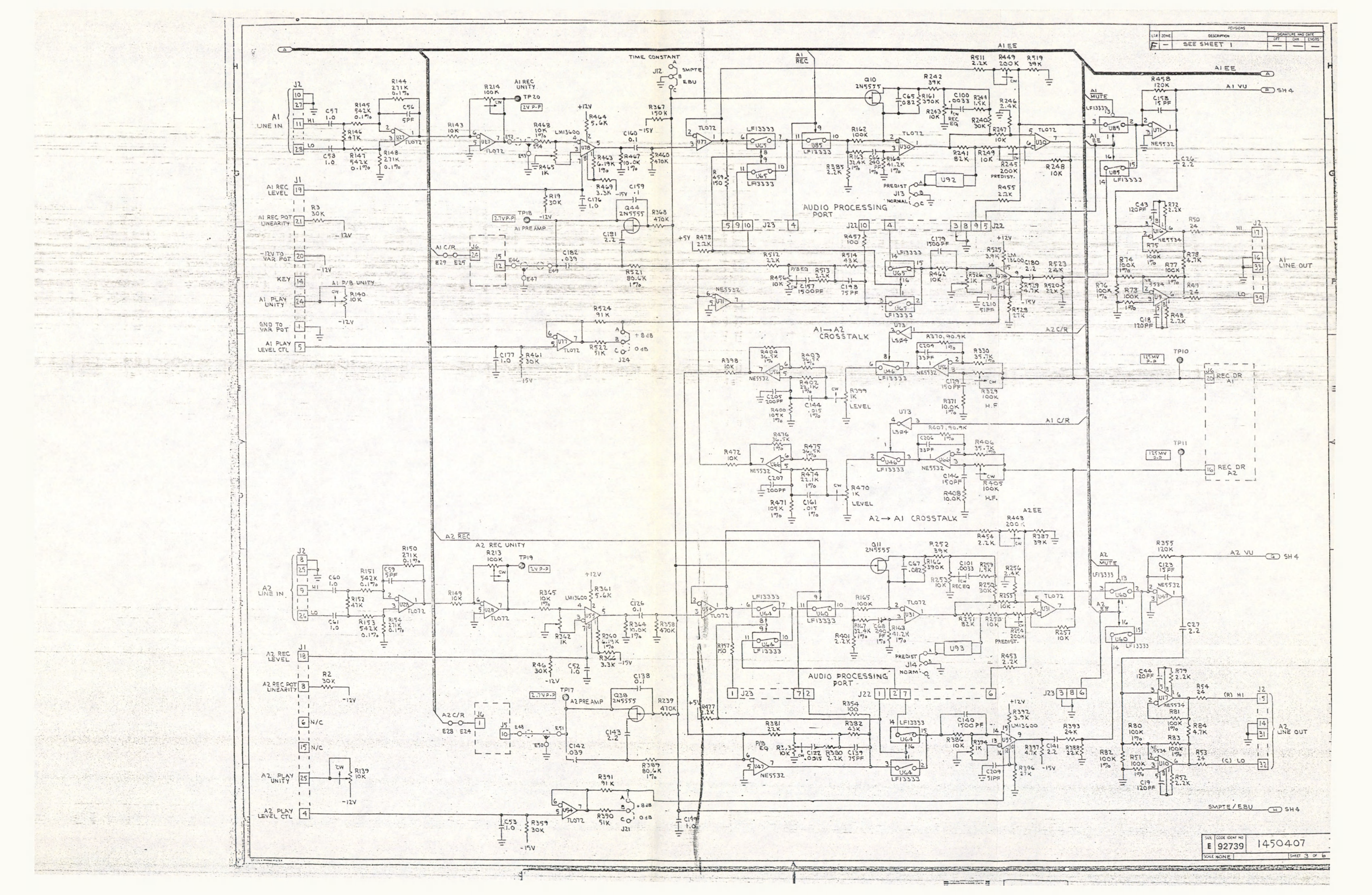
SCHEMATIC AUDIO

SIZE E | CODE IDENT NO 92739 | 1450407

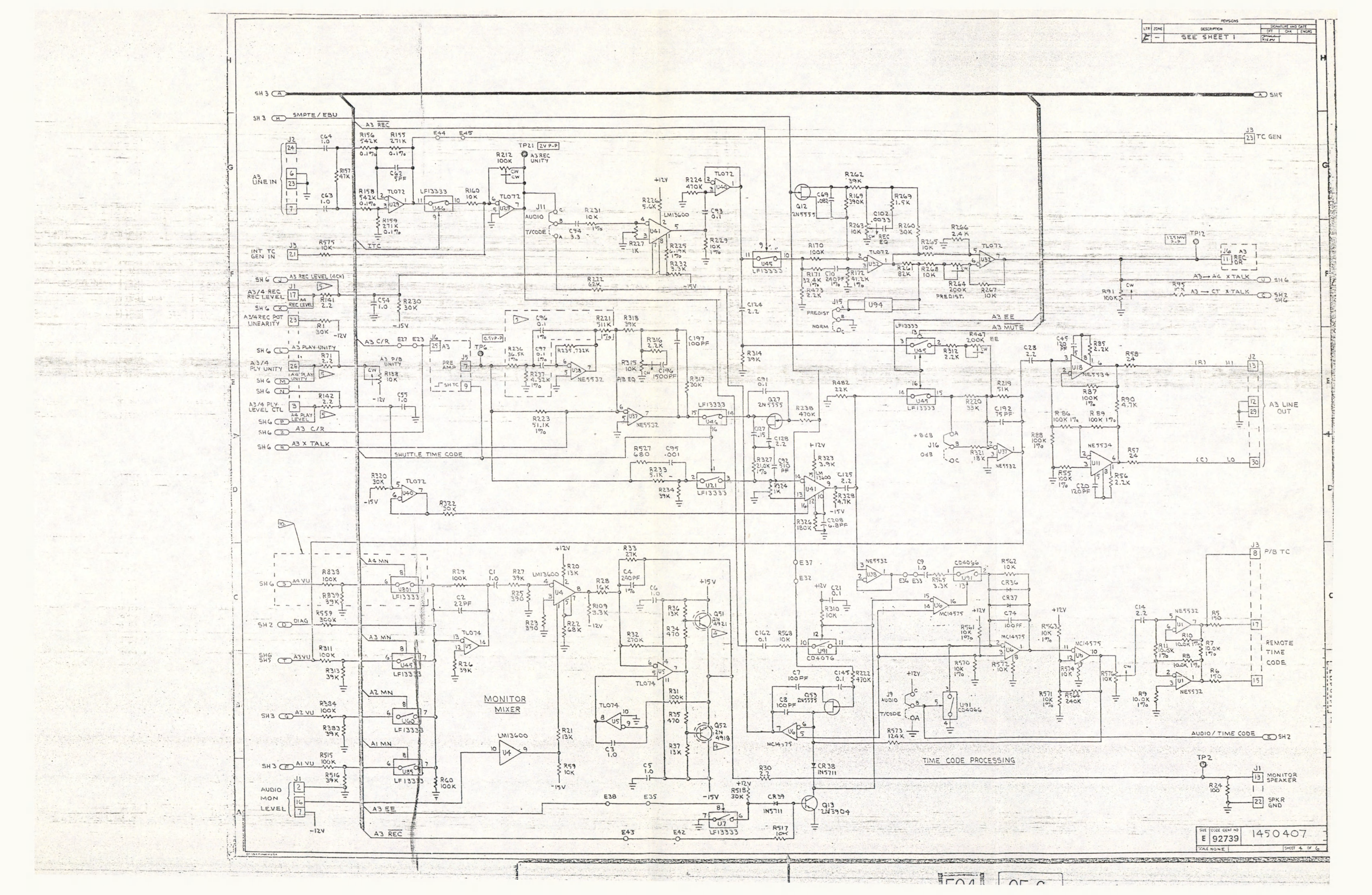
SCALE | SHEET 1 OF 6



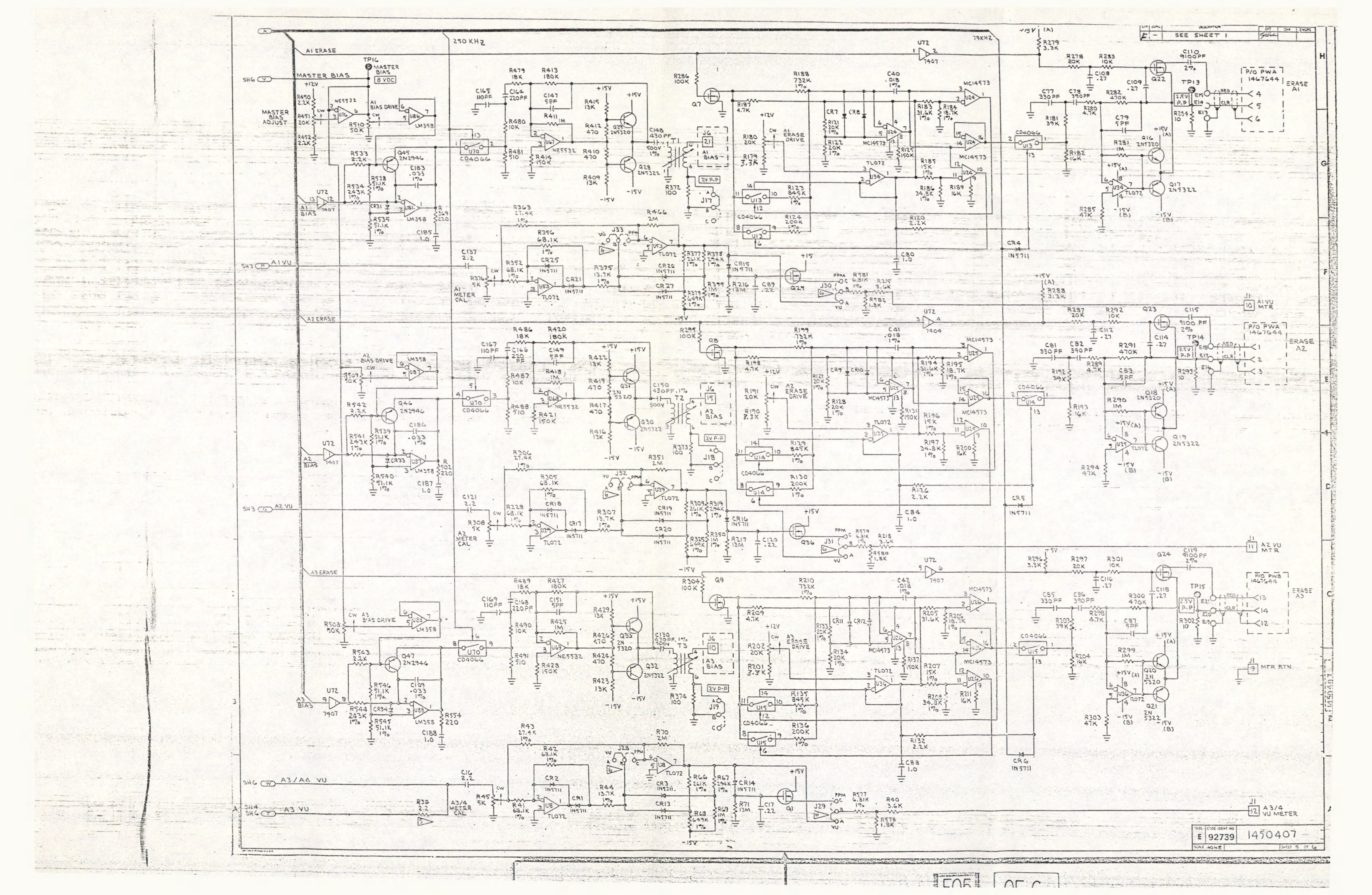
REF 16 H
SYSTEM RESET
CONFIDENCE SELECT
AUDIO SEL
REF FRAME
CT REC SIGNAL
REC ACTIVE
SHUTTLE MUTE
CT REC CMD
CT XTALK
A4 REC RELAY
A1 REC RELAY
A2 REC RELAY
A3 REC RELAY
CT R/P PREAMP
MONITOR OUT
CT PLAY
CT CONFIDENCE HD PREAMP
CT CONF LEVEL
DIAG
BIAS-ERASE TRAPS
REC ACTIVE
CT RELAY CONTROL
CT BIAS
C.T. 79KHZ
CT REC I
AUDIO/T. CODE
SEE SH 1
E 92739 1450407



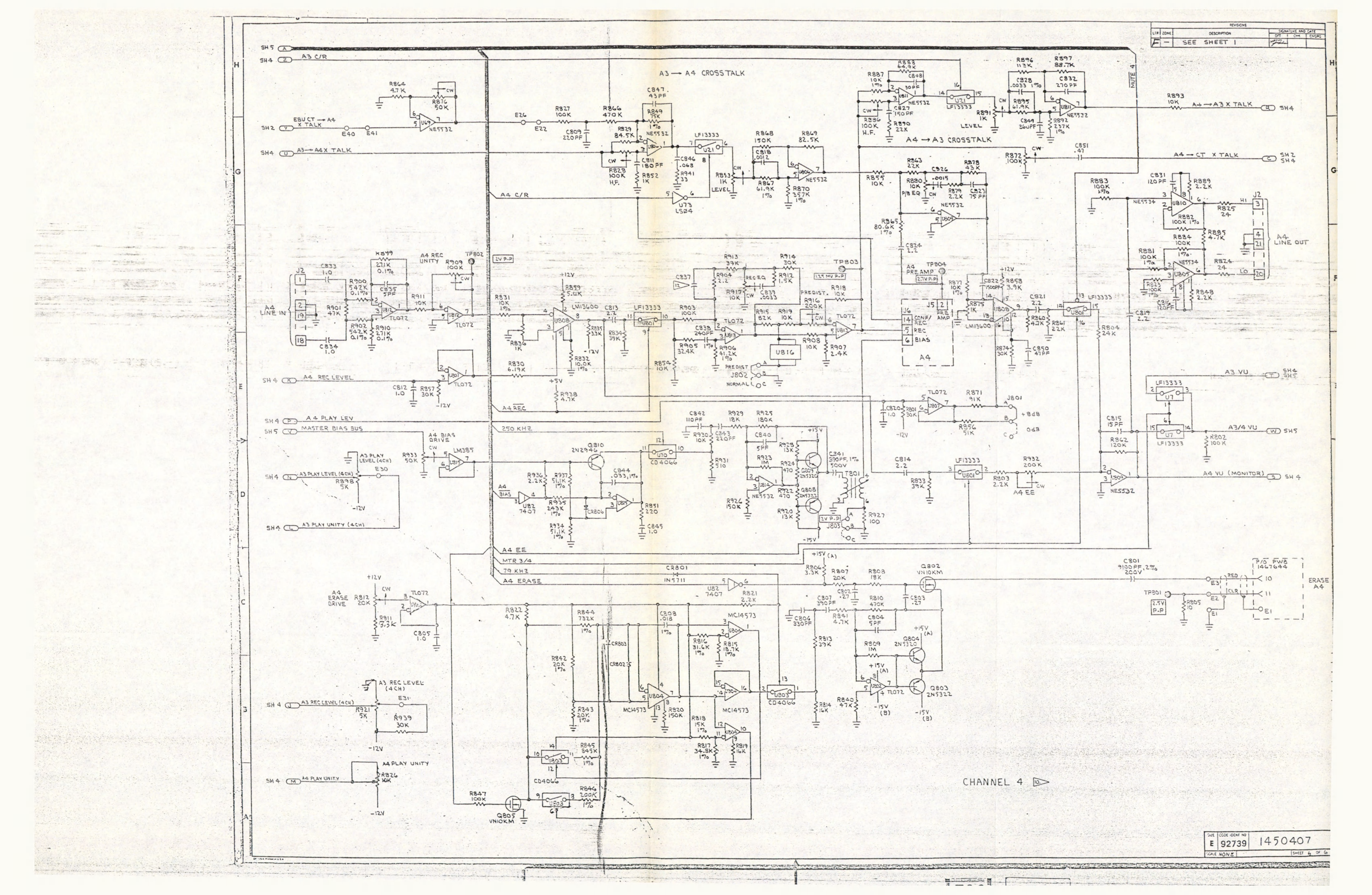
SEE SHEET 1
A1 EE
A1 VU
SH 4
TIME CONSTANT
SMPTE
EBU
A1 LINE IN
A1 REC UNITY
A1 REC LEVEL
A1 REC POT LINEARITY
-12V TO VAR POT
KEY
A1 P/B UNITY
A1 PLAY UNITY
GND TO VAR POT
A1 PLAY LEVEL CTL
A1 PREAMP
AUDIO PROCESSING PORT
A1 MUTE
A1 EE
PREDIST
NORMAL
A1 LINE OUT
A1 → A2 CROSSTALK
A2 C/R
A1 C/R
LEVEL
H.F.
REC DR A1
REC DR A2
A2 → A1 CROSSTALK
A2 EE
A2 REC
A2 REC UNITY
A2 LINE IN
A2 REC LEVEL
A2 REC POT LINEARITY
N/C
A2 PLAY UNITY
A2 PLAY LEVEL CTL
A2 PREAMP
A2 MUTE
A2 VU
A2 LINE OUT
SMPTE / EBU
E 92739 1450407
SCALE NONE
SHEET 3 OF 6



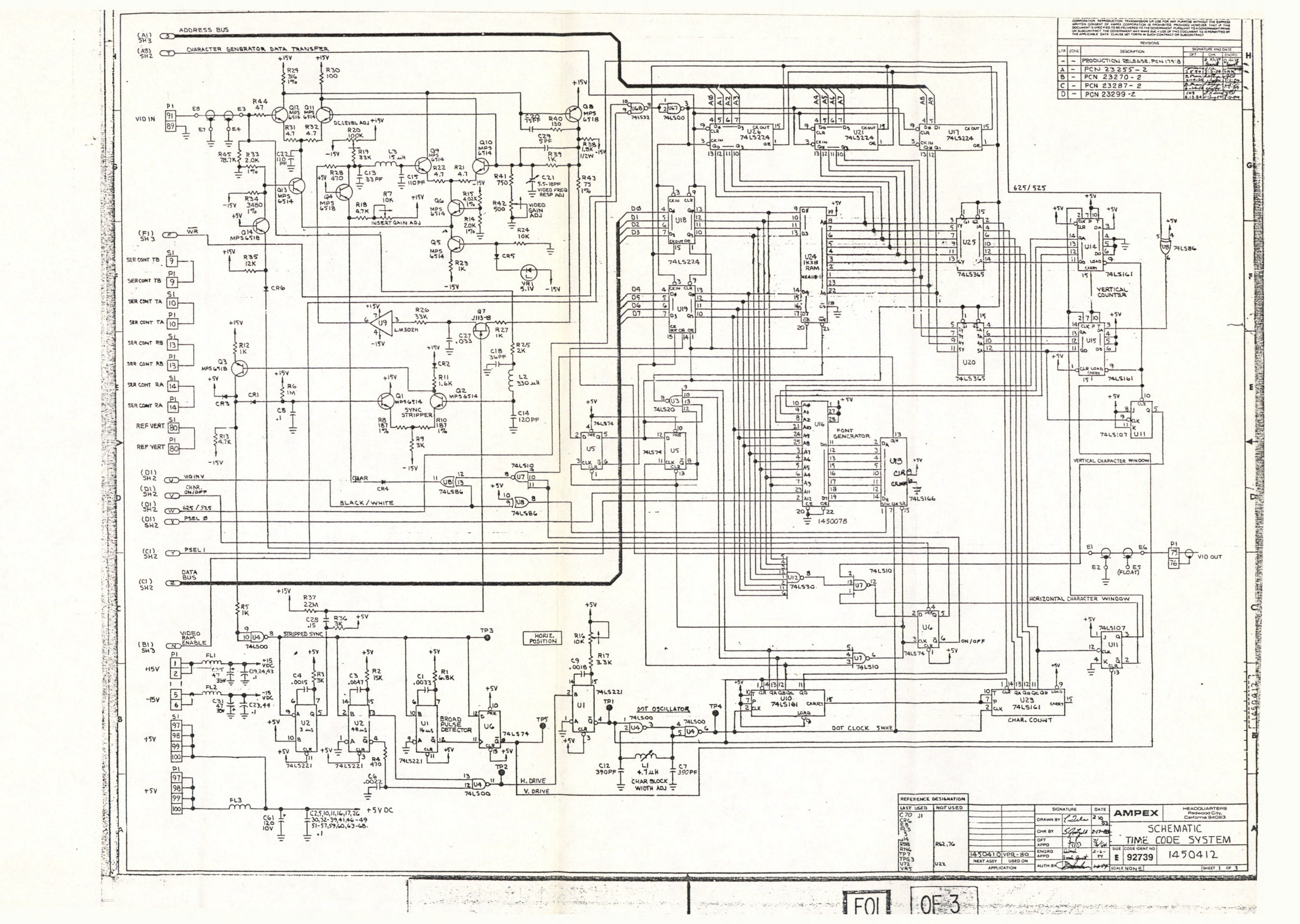
SEE SHEET 1
SMPTE / EBU
A3 REC
A3 LINE IN
INT TC GEN IN
A3 REC LEVEL (4CH)
A3/4 REC REC LEVEL
A3/4 REC POT LINEARITY
A3 C/R
A3 PLAY UNITY
A3/4 PLY UNITY
A3/4 PLY LEVEL CTL
A3 X TALK
SHUTTLE TIME CODE
AUDIO
T/CODE
PRE AMP
P/B EQ
PREDIST
NORM
A3 EE
A3 MUTE
TC GEN
A3 REC OR
A3 → A4 X TALK
A3 → CT X TALK
A3 LINE OUT
P/B TC
REMOTE TIME CODE
MONITOR MIXER
A4 MN
A3 MN
A2 MN
A1 MN
A4 VU
A3 VU
A2 VU
A1 VU
DIAG
AUDIO MON LEVEL
TIME CODE PROCESSING
AUDIO / TIME CODE
MONITOR SPEAKER
SPKR GND
E 92739 1450407
SHEET 4 OF 6



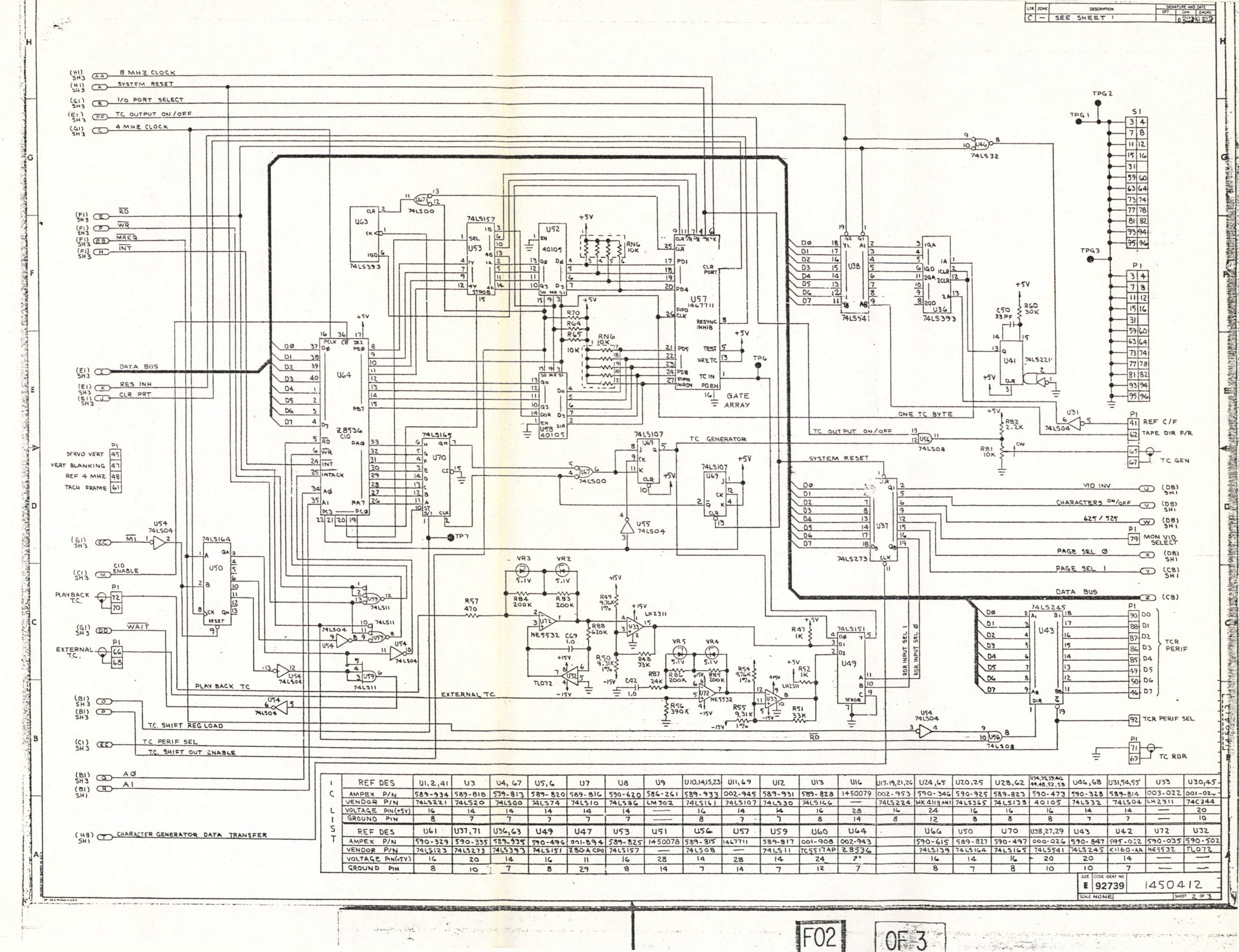
SEE SHEET 1
MASTER BIAS
MASTER BIAS ADJUST
A1 ERASE
A2 ERASE
A3 ERASE
A1 VU
A2 VU
A3/A4 VU
A3 VU
A1 BIAS
A2 BIAS
A3 BIAS
A1 BIAS DRIVE
A2 BIAS DRIVE
A3 BIAS DRIVE
A1 ERASE DRIVE
A2 ERASE DRIVE
A3 ERASE DRIVE
A1 METER CAL
A2 METER CAL
A3/A4 METER CAL
250 KHz
79KHz
P/O PWA 1467644
ERASE A1
ERASE A2
ERASE A3
A1 VU MTR
A2 VU MTR
MTR RTN
A3/4 VU METER
E 92739 1450407
SHEET 5 OF 6



SEE SHEET 1
A3 → A4 CROSSTALK
A4 → A3 CROSSTALK
A4 → A3 X TALK
A4 → CT X TALK
A4 LINE IN
A4 LINE OUT
A4 REC LEVEL
A4 PLAY LEV
MASTER BIAS BUS
A3 PLAY LEVEL (4CH)
A3 PLAY UNITY (4CH)
A3 REC LEVEL (4CH)
A4 PLAY UNITY
A3 VU
A3/4 VU
A4 VU (MONITOR)
ERASE A4
CHANNEL 4
E 92739 1450407
SCALE NONE
SHEET 4 OF 6



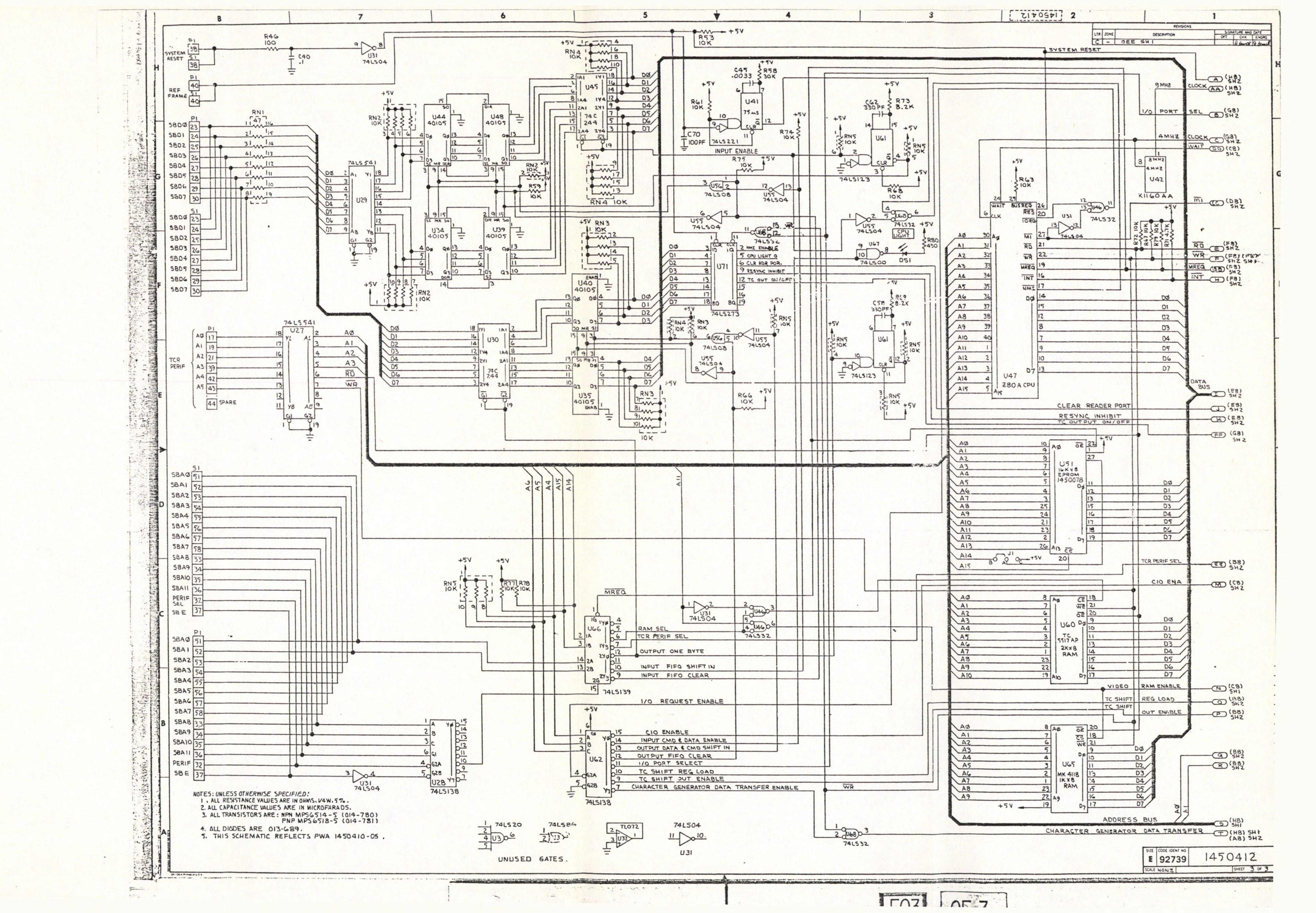
ADDRESS BUS
CHARACTER GENERATOR DATA TRANSFER
VID IN
VID OUT
DATA BUS
VIDEO RAM ENABLE
STRIPPED SYNC
SYNC STRIPPER
INSERT GAIN ADJ
VIDEO GAIN ADJ
VIDEO FREQ RESP ADJ
DC LEVEL ADJ
BLACK/WHITE
BROAD PULSE DETECTOR
HORIZ. POSITION
H. DRIVE
V. DRIVE
DOT OSCILLATOR
DOT CLOCK 5MHZ
CHAR BLOCK WIDTH ADJ
CHAR. COUNT
FONT GENERATOR
VERTICAL COUNTER
VERTICAL CHARACTER WINDOW
HORIZONTAL CHARACTER WINDOW
ON/OFF
625/525
REVISIONS
PRODUCTION RELEASE
PCN 23255-2
PCN 23270-2
PCN 23287-2
PCN 23299-2
REFERENCE DESIGNATION
AMPEX
HEADQUARTERS Redwood City, California 94063
SCHEMATIC
TIME CODE SYSTEM
92739
1450412
1450410 VPR-80
SCALE NONE
SHEET 1 OF 3
F01 OF 3



I C L I S T																						
REF DES	U1,2,41	U3	U4, 67	U5,6	U7	U8	U9	U10,14,15,23	U11,69	U12	U13	U16	U17-19,21,26	U24,65	U20,25	U28,62	U34,35,39,40, 44,48,52,58	U46,68	U31,54,55	U33	U30,45
AMPEX P/N	589-934	589-818	539-813	589-820	589-816	590-620	586-261	589-933	002-945	589-931	589-828	1450079	002-953	590-346	590-925	589-823	590-473	590-328	589-814	003-022	001-02-
VENDOR P/N	74LS221	74LS20	74LS00	74LS74	74LS10	74LS86	LM302	74LS161	74LS107	74LS30	74LS166	—	74LS224	MK4118AN1	74LS365	74LS138	40105	74LS32	74LS04	LH2311	74C244
VOLTAGE PIN(+5V)	16	14	14	14	14	14	—	16	14	14	16	28	16	24	16	16	16	14	14	—	20
GROUND PIN	8	7	7	7	7	7	—	8	7	7	8	14	8	12	8	8	8	7	7	—	10
REF DES	U61	U37,71	U36,63	U49	U47	U53	U51	U56	U57	U59	U60	U64		U66	U50	U70	U38,27,29	U43	U42	U72	U32
AMPEX P/N	590-329	590-335	589-935	590-496	001-894	589-825	1450078	589-815	1467711	589-817	001-908	002-943		590-615	589-827	590-497	000-026	590-847	595-022	590-035	590-502
VENDOR P/N	74LS123	74LS273	74LS393	74LS151	Z80A CPU	74LS157	—	74LS08	—	74LS11	TC5517AP	Z8536		74LS139	74LS164	74LS165	74LS541	74LS245	K1160-AA	NE5532	TL072
VOLTAGE PIN(+5V)	16	20	14	16	11	16	28	14	28	14	24	7'		16	14	16	20	20	14	—	—
GROUND PIN	8	10	7	8	29	8	14	7	14	7	12	7		8	7	8	10	10	7	—	—

SIZE E CODE IDENT NO. 92739 1450412
SCALE NONE SHEET 2 OF 3

F02 OF 3



SYSTEM RESET
REF FRAME
TCR PERIF
SPARE
CLEAR READER PORT
RESYNC INHIBIT
TC OUTPUT ON/OFF
DATA BUS
ADDRESS BUS
CHARACTER GENERATOR DATA TRANSFER
TCR PERIF SEL
CIO ENA
INPUT ENABLE
RAM SEL
OUTPUT ONE BYTE
INPUT FIFO SHIFT IN
INPUT FIFO CLEAR
I/O REQUEST ENABLE
CIO ENABLE
INPUT CMD & DATA ENABLE
OUTPUT DATA & CMD SHIFT IN
OUTPUT FIFO CLEAR
I/O PORT SELECT
TC SHIFT REG LOAD
TC SHIFT OUT ENABLE
CHARACTER GENERATOR DATA TRANSFER ENABLE
VIDEO RAM ENABLE
TC SHIFT REG LOAD
TC SHIFT OUT ENABLE
Z80 A CPU
U51 16K X 8 EPROM 1450078
U60 TC 5517AP 2K X 8 RAM
U65 MK 4118 1K X 8 RAM
NOTES: UNLESS OTHERWISE SPECIFIED:
1. ALL RESISTANCE VALUES ARE IN OHMS, 1/4W, 5%.
2. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
3. ALL TRANSISTORS ARE: NPN MPS6514-5 (014-780)
PNP MPS6518-5 (014-781)
4. ALL DIODES ARE 013-689.
5. THIS SCHEMATIC REFLECTS PWA 1450410-05.
UNUSED GATES.
E 92739 1450412
SCALE NONE
SHEET 3 OF 3